

AMERICAN BEE JOURNAL



NO. 1.—PART OF D. J. BLOCHER'S CAUCASIAN BEE-YARD, IN STEPHENSON COUNTY, ILLINOIS.



NO. 2.—ONE OF MR. BLOCHER'S ITALIAN BEE-YARDS.—See Page, 105.



PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
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IMPORTANT NOTICE.

THE SUBSCRIPTION PRICE of this Journal is 50 cents a year, in the United States of America, (except Chicago, where it is 75 cents), and Mexico; in Canada 60 cents; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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National Bee-Keepers' Association

Objects of the Association.

- 1st.—To promote the interests of its members.
- 2d.—To protect and defend its members in their lawful rights.
- 3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, \$1.00.

General Manager and Treasurer—
 N. E. FRANCE, Platteville, Wis.

If more convenient, Dues may be sent to the publishers of the American Bee Journal.

"Songs of Beedom"

This is a pamphlet, 6x9 inches, containing 10 songs (words and music) written specially for bee-keepers, by Hon. Eugene Secor, Dr. C. C. Miller, and others. They are arranged for either organ or piano. The list includes the following: "Bee-Keepers' Reunion Song;" "The Bee-Keeper's Lullaby;" "The Hum of the Bees in the Apple-Bloom;" "The Humming of the Bees;" "Buckwheat Cakes and Honey;" "Dot Happy Bee-Man;" "Bee-Keepers' Convention Song;" "The Busy, Buzzing Bees;" "Spring-Time Joys;" and "Convention Song." The pamphlet is mailed for 25 cents, or sent with the American Bee Journal one year—both for only 60 cents. Send all orders to the American Bee Journal, 118 W. Jackson, Chicago, Ill.

Western Bee-Keepers We Will Show You how to save money. Send for our new catalog of the best Bee-ware made.
 THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.

American Bee Journal

Tennessee-Bred Queens

All from extra-select mothers, Davis' Best, and the best money can buy

3-band and Golden Italians bred 3¼ miles apart, Carniolans 5, Caucasians 7 miles away

THREE-BAND AND GOLDEN ITALIANS

	November 1st to July 1st			July 1st to Nov. 1st			BREEDERS	
	1	6	12	1	6	12		
Untested	\$1.00	\$5.00	\$9.00	\$.75	\$ 4.00	\$ 7.50	Straight 5-band	\$10.00
Select Untested	1.25	6.50	12.00	1.00	5.00	9.00	Select Golden	4.00
Tested	1.75	9.00	17.00	1.50	8.00	15.00	Select 3-band	4.00
Select Tested	2.50	13.50	25.00	2.00	10.00	18.00	Select Carniolan	5.00
							Select Caucasian	5.00

Untested Carniolan and Caucasian, \$1.25 each; 6 for \$7.00; 12 for \$12.00.

Nuclei, without queens: 1-frame, \$2.50; 2-frame \$3.50; 3-frame \$4.50. 1 Full Colony, 8-frame \$9.00.

Select the queen wanted and add to the above prices.

NOTE

I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business. No bee-disease.

JOHN M. DAVIS, Spring Hill, TENNESSEE, U. S. A.

A Standard-Bred Italian Queen-Bee

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

What They Say of Our Queens

GEORGE W. YORK & CO.—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
 Nemaha, Co., Kan., July 15, 1905. **A. W. SWAN.**

GEORGE W. YORK & CO.—After importing queens for 15 years you have sent me the best. She keeps 9x Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
 Ontario, Canada, July 22, 1905. **CHAS. MITCHELL.**

GEORGE W. YORK & CO.—The queen I bought of you has proven a good one, and has given me some of my best colonies.
 Washington Co., Va., July 22, 1905. **N. P. OGLESBY.**

GEORGE W. YORK & CO.—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line.
 Marion Co., Ill., July 13. **E. E. MCCOLM.**

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for \$1. Three Queens (without Journal) would be \$2.10, or 6 for \$4.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

Address, GEORGE W. YORK & CO., 118 W. Jackson, Chicago, Ill.

Getting New Subscribers

This should be a good time to get new subscribers for the American Bee Journal. On another page we offer a number of premiums for such work. We hope that as many of our present readers as possible will help us to increase our subscription list. The more

intelligent bee-keepers are, the better it will be for all interested in the business. And much of that intelligence is secured by reading. We will be pleased to send free sample copies on request. Shall we not be favored with a large increase of new subscriptions during the next 2 or 3 months?

LOOK OUT FOR LEAKS

A leaky roof on your hen-house will cost you a good many dollars in loss. You needn't expect any profits if the water drips or pours all over your poultry every time it rains or snows.

"STAR" FELT ROOFING

makes a water-tight, "just right" roof for the hen-house. Will keep your poultry dry and warm so they can work and save you all the loss the leaks cause. It's cheaper, looks better, and is better than shingles or metal, and lasts longer; made in 1, 2 and 3 ply, especially for poultry houses and coops. You lay it yourself. Write for prices and free samples today.

UNITED INCUBATOR & POULTRY SUPPLY MFG. CO.,
Dept. 27, 26-28 Vesey Street New York City, N. Y.



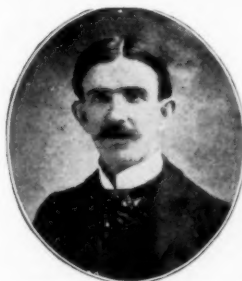
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ESTABLISHED 1889

Bee-Supplies. Root's Goods in Indiana.

Standard Hives with latest improvements, Danzenbaker Hives, Honey-Boxes, Comb Foundation and everything that is used in the bee-yard. Large illustrated catalog mailed free. Finest White Clover Extracted Honey for sale in any quantity desired.

WALTER S. POWDER, 513-515 Massachusetts Ave., Indianapolis, Ind.



Dittmer's Comb Foundation

Is the Best. Not because we say so, but because the Bees prefer it to other makes.

Dittmer's Process is Dittmer's

It has built its Reputation and established its Merits, on its own Foundation and its own Name.

We make a Specialty of Working Wax into Foundation for Cash.

Write for free catalog and prices on full Line of Supplies.

GUS DITTMER CO., Augusta, Wis.

31-1f

Lewis Bee-Supplies Shipped Promptly

A small stock left of slightly damaged goods, at reduced price. Send for free sale list, also full catalog of new goods. Quote us prices on Honey and Beeswax. Honey in 60-lb. cans for sale. Second-Hand Cans (60-lb.) 2 in a box, at 50c per box, or in lots of 10 boxes, at 40c.

ARND HONEY & BEE-SUPPLY CO. (Not Inc.) H. M. Arnd, Proprietor
Successors to YORK HONEY & BEE-SUPPLY CO. 191-193 E. Superior St., Chicago, Ill.
Long Distance Telephone, North 1559

Choice White Wyandottes

15 eggs 75c; 30, \$1.25. The Hoosier Potato—none better, few as good—by mail, 1-lb. 30c. 2-3t

J. F. MICHAEL, Rt. 1, Winchester, Ind.

Mention Bee Journal when writing.



FOR SALE—It will pay to get our special proposition.
A. G. WOODMAN CO., Grand Rapids, Mich.

Mention Bee Journal when writing.

BIG STOCK of The A. I. Root Co.'s and Marshfield Co.'s BEE - SUPPLIES

at their manufacturers' prices. For cash sent in April, deduct 5 percent; for cash sent in May, deduct 7 percent. Take their 1908 price-lists, if you have them; if not, send for them.

3Atf **S. D. BUELL, Union City, Mich.**

ITALIAN QUEENS—from direct imported mothers—red clover strain, \$1.00. Circular.
3A6t **A. W. YATES, 3 Chapman St., Hartford, Conn.**

QUEENS

Improved superior Italians are what **QUIRIN-THE-QUEEN-BREEDER** furnishes. Stock is Northern bred and hardy. All wintered on summer stands and not a colony lost the past winter. Over 20 years a queen-breeder.

Prices before July 1	1	6	12
Select queens.....	\$1.00	\$5.00	\$9.00
Tested queens.....	1.50	8.00	15.00
Select tested queens.....	2.00	10.00	18.00
Breeders.....	4.00		
Golden fly-band breeders.....	6.00		
Two-comb nuclei, no queen....	2.50	14.00	25.00
Three-comb nuclei.....	3.50	20.00	35.00
Full colonies on eight frames.	6.00	30.00	

Add price of whatever grade queen is wanted with nuclei or colony. Bees ready about May 10th, Danzy or L. frame. Safe arrival guaranteed. Free circular and testimonials.

Quirin-the-Queen-Breeder, Bellevue, O.
Mention Bee Journal when writing.

Italian and Caucasian BEES, QUEENS and NUCLEI

Choice home-bred and Imported stock. All Queens reared in full colonies.

Prices for May

One Untested Queen.....	\$1.10
One Tested Queen.....	1.50
One Select Tested Queen.....	1.65
One Breeder Queen.....	2.75
One C'b Nucleus (no queen).....	1.15
One Unt'd Caucasian Queen.....	1.25
One Tested Caucas'n Queen.....	1.75

Safe arrival guaranteed. For prices on larger quantities and description of each grade of queens, send for price-list.

Tested, Select and Breeders ready now.

J. L. Strong, 200 East Logan St.
4tf **Clarinda, Iowa.**

Not Cheap Queens, But Queens Cheap.

Bred from the very best selected strain. Guaranteed to work any flower.

Italian Bees Work or Money Refunded

Untested Italian queens in lots as follows:
One, 75 cents; Six, \$4.20; Twelve, \$7.80.

Tested Italian queens in lots as follows:
One, \$1.00; Six, \$5.70; Twelve, \$10.80.

Nuclei with untested Italian queen:
One fr., \$1.75; Two fr., \$2.25; Full Col. \$4.75.

Nuclei with tested Italian queen:
One fr., \$2.00; Two fr., \$2.50; Full Col. \$5.00.

The above queens are all reared from the very best selected red clover Italian queens. Orders filled by return mail. Dealer in Bee-keepers' Supplies.

4Atf **W. J. Littlefield, R. F. D. No. 3**
Little Rock, Ark.
Mention Bee Journal when writing.

ITALIAN QUEENS

By Return Mail

Warranted \$1.00 each; 6 for \$5.00.

Tested, \$1.00. Circular Free.

D. J. Blocher, Pearl City, Illinois.

Honey Cases For Sale

Two cans to the case. Both cans and cases in A-1 condition. Price, 30c per case in lots of 100 cases or more. Write for prices.

Michigan White Clover Honey Co.

4A4t **29 WOODBRIDGE ST., WEST, DETROIT, MICH.**

Mention Bee Journal when writing.

American Bee Journal

3-Frame Nuclei of Bees FOR SALE

We are now booking orders for Italian Bees—with fine Tested, Italian Queens—3-frame nuclei at \$3.50 each, or \$3.25 each in lots of 5; Full Colonies in 8-frame hives—\$7 each, or \$6 in lots of 5. The Nuclei are for delivery about May 10, and full colonies May 1, or perhaps a little earlier. All will be shipped from point 100 miles west of Chicago, and the prices quoted are f. o. b. express car there. No disease, and satisfaction guaranteed. First come, first served. Address,

GEORGE W. YORK & CO., 118 W. Jackson, Chicago

PRIZE TAKERS

Pharr's Golden took first prize at 3 exhibits in Texas in 1907. We will furnish Golden, Carniolan, Caucasian, and 3-band Italian Queens, untested, \$1.00 till May 15, then 75 cents; Tested, \$1.25 till May 15, then \$1.00; For large quantities, write. Our 3-band Breeders from W. O. Victor and Grant Anderson strains; other races from the best obtainable. "Prompt service and satisfaction," is our motto.

ADDRESS,

NEW CENTURY QUEEN-REARING CO.,
or JOHN W. PHARR,

3Atf

Berclair, Texas

Moore's Strain, and Golden Italian Queens

Select Untested Queens, \$1; 6 for \$5; 12 for \$9. Carniolan, Banat, Caucasian Queens; Select, \$1.25; 6 for \$6; 12 for \$10. Tested, any race, \$1.50; 6 for \$8. Choice Breeders, \$3.50. Circular free.

3Atf

W. H. RAILS, Orange, Calif.

HONEY Bees and Queens FOR SALE

50 cases Amber and Buckwheat comb honey in case lots at \$2.50 per case of 24 Sections. Dark amber extracted at 75c.

Our Italian Bees and Queens are a hardy, improved, superior strain. Northern-bred; are wintered on summer stands. Over 20 years a Queen Breeder, 500 colonies employed. Send for Circular and Testimonials.

QUIRIN-The-Queen-Breeder
BELLEVUE, OHIO

3Atf

FOR SALE

Honey in 60-pound cans.

ROBT. A. HOLEKAMP & SON,
4263 Virginia Ave., St. Louis, Mo.

HONEY California sager, pure and well ripened. Place your order now. Light amber, 60 lb. can, 6c; case, 120 lbs, 5 1-2c F. O. B. Sample 10c.

R. M. SPENCER, Nordhoff, Calif.

ITALIAN BEES AND QUEENS

Best of Stock, free from disease. For May delivery: Untested, 75c each; 2-frame Nucleus, with Queen, \$2.50 each. Chesley Presswood, Reliance, Tenn. 3Atf

A FULL LINE of Bee-Keepers' Supplies, at half-price. My patent Section Machine rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for Catalog and price-list. CHAS. MONDENG,
160 Newton Ave. N., Minneapolis, Minn. 3Atf

BEE-SUPPLIES Send list of wants for low prices and best goods, to
4A2t E. T. ABBOTT, St. Joseph, Mo.

"Forty Years Among the Bees"

By Dr. C. C. Miller

One of the Best-Known Honey-Producers in all the World

THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either—Northwestern Illinois.

The book is bound in substantial cloth, gold-lettered, and is sent post-paid for only \$1.00; or with the American Bee Journal one year for \$1.25. (Or send us 4 new subscriptions to the Bee Journal—with \$2.00—and

we will mail you the book free as a premium.) Every bee-keeper ought to have both the book and the Bee Journal, if not already possessors of them.

As Dr. Miller gets a royalty on his book—so many cents on each copy sold—every bee-keeper who buys it is thus helping a little to repay him for his effort to lead others to success through his writings on bee-culture.

As we have a good stock of these books on hand, we can fill all orders by return mail. This is the time of year to read up on bee-keeping. Better send us your order at once for Dr. Miller's book, and study it carefully so as to make the most of the bee-season. Address,

GEORGE W. YORK & CO., 118 W. JACKSON BLVD.
CHICAGO, ILL.



TEXAS

QUEENS

The famous honey producers are well in the lead. I am booking orders now for April, May and June deliveries—Italians, Carniolans, Golden and Banat Queens.

Prices either race: Untested, 75c each; \$8.00 doz. Choice Tested, \$1.25 each; \$12.00 doz. Choice Breeders, \$3.00 each. Circular for your address. 2-1f

GRANT ANDERSON, Sabin, Texas

Alsike Clover Seed

Medium Red, Large Red, and Timothy Seed, for sale. Write for samples and prices. : : :

Catalog Apiarian Supplies free.

2-3t F. A. SNELL, Milledgeville, CARROLL CO., ILL.

IF YOU WANT THE BEE-BOOK

That covers the whole Apicultural Field more completely than any other published, send \$1.20 to

Prof. A. J. Cook, Claremont, Cal.,

—FOR HIS—

"BEE-KEEPER'S GUIDE"

Liberal Discounts to the Trade.

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BEE-KEEPERS

Write us now for our Catalog and get low prices on good, honest,

BEE-KEEPERS' SUPPLIES

Our specialty is making Sections. All other goods up-to-date.

AUG. LOTZ & SON, Cadott, Wis.

10A34t Please mention the Bee Journal.

SOLID GOLDEN QUEENS

Ready for delivery April 1st. Select Untested Queens, \$1 each; Tested Queens, \$2; Select Tested, \$3. You can only get good Queens from the South in the early spring. Book your orders NOW.

H. M. PARKER, JR.

3Atf JAMES ISLAND, S. C.

FOR SALE AT A BARGAIN

90 8-frame Brood-Chambers
200 Heddon Extracting Supers
100 Heddon Comb Supers
100 Heddon Wood-Zinc Honey-Boards
100 Heddon Covers
All in good condition. No disease. Address,
4A2t W. C. LYMAN, Downers Grove, Ill.
Mention Bee Journal when writing.

FOR SALE 50 Colonies of Italian and Carniolan Bees for sale. All in 8 and 9 frame 1 1/4 story hives; all nearly new, and bees all in good condition. Single colony, \$6; 5 to 10, \$5.50 each.

WM. J. HEALY, Mineral Point, Wis.
Mention Bee Journal when writing.



(Entered as second-class mail-matter at the Chicago, Ill., Post-Office.)

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GEORGE W. YORK, Editor

CHICAGO, ILL., APRIL, 1908

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The National Wins Highest Award

The report of the Commission on Tests, headed by Dr. H. W. Wiley, chief of the bureau of chemistry of the Department of Agriculture, at the First Annual World's Pure Food Exposition, held in the Chicago Coliseum last November, was made public to-day (March 24), by Managing Director Thos. T. Hoyne. Among the winners of highest awards in 41 classes was the National Bee-Keepers' Association which, as most of our readers know, made a good exhibit of honey. With the names of the winners of awards came the announcement of the date of this year's exposition. So great was the success of the 1907 show that the management has extended the time for 1908, and the big Coliseum will again be open for the pure food exposition from Nov. 11 to 21, 1908.

"Comb Honey Proved Pure"

In a recent number of the Chicago Record-Herald there appeared a number of recipes in which honey is used as an ingredient, and also some supposed-to-be authentic information concerning honey itself. Among the statements was one which asserted that "artificial combs of paraffine are now manufactured for the insects," and also that the "wax can not be easily assimilated" when eating comb honey. All of this "information" was published in the department edited by Marion Harland.

Of course there are many bee-keepers who read the Chicago Record-Herald, and at once some of them wrote to Marion Harland, calling attention to the misstatements. Among those who asked for a correction were Mrs. H. M. Arnd, R. W. Boyden, C. P. Dadant, and the Editor of the American Bee Journal.

A few days later a very nice correction appeared under the heading given above. Liberal quotations were also taken from Bulletin No. 59 of the United States Department of Agriculture, which gave full assurance that comb honey is absolutely pure, and that there is no such thing as honey-comb made of paraffine.

Marion Harland promised to make further correction a week or so later. All of which shows that when those who make misstatements about honey are written to in the right spirit, they are likely to be willing to make suitable correction. No errors of this kind should appear without some bee-keeper writing to the editor of the paper. The misrepresentation of comb honey that was started over 25 years ago is still "marching on." It seems almost impossible to counteract its evil effects. However, the best that can be done is to try to correct it whenever it appears in print.

Write for Your Local Paper

Mr. Irving Long, of Missouri, says that if bee-keepers would write something interesting about bees for their local newspapers, there would be a better demand for honey. Surely this would be easy to do. There are so many interesting things that could be written by those who keep bees, and who also have honey for sale, that it would be welcomed by almost any newspaper editor. At the same time it would help to give the editor a little honey and also an advertisement offering honey for sale. There are many ways in which lots of bee-keepers could extend their home market for honey if they would think about it, and then act.

Bottom Starters in Sections

At first glance one would think there could be no surer way to have sections well filled with honey and entirely built out to the wood, than to have the section entirely filled with foundation, either by having the sheet waxed in or by using split sections. But it seems that at least sometimes there are failures. E. F. Atwater says this in Gleanings:

"As I was the first in this part of the West to use sections containing a full sheet of foundation fastened on all four sides, and as that experience has covered several years, extending in part to the present, I feel qualified to say something about the results. In many cases the results are all that could be desired—beautiful slabs of honey without hole or blemish to mar their beauty. But here the (as yet) inevitable sagging propensities of all surplus foundation on the market, in hot weather, is a factor with which we must reckon. A full sheet of foundation as usually used, attached at top only, with 1-16 to 1/4 inch space below it, will usually sag evenly, resulting in a comb even and smooth of surface. But if the foundation completely fills the section, being attached at all four sides, then when the sheet does sag, a bulge usually occurs somewhere near the bottom; and the bees, when the comb needs capping, are often unable to puzzle out a satisfactory solution of the problem; a depression or small uncapped area results, besides a tendency toward comb attachments to the separator.

"But the downward sagging does not constitute the only difficulty. Under the manipulation (or "mandibleation") of the wax-workers, the sheet of foundation enlarges transversely, resulting all too often in another bulge in the foundation, and giving rise to another problem which is too difficult of solution for the untaught instinct of the bees, and this results in another blemish on the face of the finished comb."

It begins to look as if there was no better way for getting combs built solid in sections than to use bottom-starters. With them there will be just as solid fastening top and bottom as with hot-waxing or split sections, and without the danger of buckling.

American Bee Journal

Those Honey Crop Reports of 1907

When a bee-keeper meets a stranger whom he discovers to be another bee-keeper, about the first question he wants to ask is: "How many colonies have you?" the next question being: "What was your crop?" Nor is he less interested to get these same items regarding bee-keepers who are old friends and acquaintances. A large number of such reports have been received, and instead of their appearing at different times in different numbers, they have been saved up to appear in the present number in tabulated form.

While this has the advantage that the reports occupy very much less space, it also has the advantage that one may see at a glance just the thing one is most interested to know. It is pretty safe to predict that a great many will vote this an unusually interesting number of the American Bee Journal. They are as follows:

	No. Col.	Lbs. Comb.	Lbs. Ext.
ALABAMA.			
Ryan, H. R. R.	15	82	
ARIZONA.			
Openshaw, W. F.	600	35,000	
ARKANSAS.			
Brown, M.	176	4,370	250
Cannaway, H. P.	2	60	
CALIFORNIA.			
Abbe, Chas. H.	150	4,000	
Fray, R. H.	350	22,500	
Goodman, Chas.	50	1,300	1,380
Iselin, Sebastian	120	0,400	350
Lee, W. S.	106	134	4,150
Lobre, A.	18		2,800
Muth-Rasmussen, Wm.	60	11,233	
Scott, U. B.	60	4,481	120
Thayer, H. E.	11		1,500
Wise, O. T.	128	9,000	60
COLORADO.			
Wright, E. C.	21	1,524	
CONNECTICUT.			
Griffin, S. J.	6	402	
Guernsey, C. S.	8	175	
Wiggin, Mrs. C. D.	6	25	
GEORGIA.			
Free, W. J. H.	15	150	25
ILLINOIS.			
Anderson, J. L.	55	2,715	260
Baumgaertner, J. G.	15	300	
Becker, Charles	29		600
Bever, M.	53	500	100
Bolt, R.	26	1,650	120
Crim, S. T.	34	800	30
Dadant & Sons	210		15,000
Leonenburg, John	40	546	1,109
Finkenbinder, D. A.	9	800	
Foulk, F. S.	8	325	
Group, John F.	6	600	500
Holdener, J. D.	67	1,600	350
Jones, M. A.	10	500	
Kelsey, W. T.	5	250	
Kendall, Frank R.	11	660	550
Kluck, N. A.	27	400	4,000
Littler, Chas.	80	2,000	
Macklin, Chas. G.	18	1,460	70
Mahr, M. D.	14	300	50
Marshall, Wm.	85	2,000	
May, Fred H.	98	200	250
Meise, F. A.	45	25	
Miller, Dr. C. C.	126	7,300	
Moffett, W. E.	45		2,225
Mottinger, S. L.	23	1,050	
Nydegger, John	50		2,000
Priestman, W. H.	8	300	
Secor, W. G.	30	500	1,800
Slack, Geo. B.	26	700	60
Stordock, C. H.	105	140	5,320
Vogel, Henry	30	2,100	100
Wagner, F. M.	50	400	
Wand, Geo.	9	220	870
Whitmore, Dr. N. P.	5	232	200
IDAHO.			
Boone, A. E.	1	266	
INDIANA.			
Briggs, S. W.	10	150	
Goss, Walter	14	288	
Henze, F. Andrew	6	44	370
Mahin, Milton	13		
Oren, John L.	25	200	200
Sage, George	24	600	
IOWA.			
Adams, Timothy	24		600
Ahlens, Herman	37	840	
Aldrich, B. A.	220	100	12,000

	No. Col.	Lbs. Comb.	Lbs. Ext.
Barber, Isaac	77		9,625
Brown, Harley	11	328	
Burkhardt, Otto	6	500	
Cartwright, W.	150	700	2,900
Confare, Geo. B.	62	200	1,200
Doan, Chas.	32	550	950
Dobson, M. B.	13	50	
Egenes, John	6	280	
Fairbanks, C. A.	36	1,700	
Hall, F. W.	131	5,000	3,600
Hinrichs, Henry	43	1,200	1,000
Johnson, Edward J.	16	900	
Lenty, John A.	14	895	85
Lester, W. W.	80		
Little, D. G.	80	1,800	400
May, J. W.	30	100	900
Miller, C. H.	38	488	
Moen, Geo. O.	24		600
Niemann, Joseph M.	29	1,025	600
Peterson, Fred	4	144	
Rigg, Thos. F.	20	1,700	
Roberts, Wm. G.	40		
Schilling, G. F.	50	2,000	100
Schmidt, B. F.	10	250	1,000
Siemonsma, Wm.	2	50	
Stine, Rev. J. W.	6		
Strong, J. L.	122	127	974
Tackaberry, A.	60	986	425
KANSAS.			
Downie, Frank	9	200	
Frank, J. C.	117	1,537	1,213
Hillebrandt, H. F.	15	24	394
Moore, F. D.	8	24	180
Newman, I. M.	2	30	
Zahner, Max	62		200
KENTUCKY.			
Montfort, O. B.	46	700	4,800
Rice, L. T.	6	950	
Swearingen, W. A.	54	1,863	270
MAINE.			
Carroll, Weston	6	80	
MASSACHUSETTS.			
Knox, H. E.	5	127	93
Loring, Miss Martha	1	93	
Shattuck, M. E.	2	225	
Stover, Edward B.	9	40	
MICHIGAN.			
Bechtel, Moses	15	340	
Bleech, G. A.	120		3,900
Doty, H. A.	30	500	1,600
English, Clyde	290	5,000	
Gale, George	18	885	40
Gorton, L. E.	18	500	
Guernsey, A. H.	134	2,200	200
Huntly, A.	31	800	
Myer, Sanford L.	11	300	
Sims, John L.	21	500	300
Tyler, Edward	12	350	
Warne, E. B.	50	2,000	250
MINNESOTA.			
Luedloff, Herman	40		36
Nelson, C. N.	13	400	
Ridley, J.	75	300	2,500
MISSOURI.			
Detherow, Ino. A.	8	192	
Erickson, A. G.	45	400	
French, I.	6	227	
Gamble, H. W.	8	300	200
House, O. H.	4	150	
Keith, H. W.	40	1,000	
Lawing, S. S.	23	1,564	
Long, Irving	39	500	2,000
Moore, Eliza	15	525	
Pancoast, H. H.	33	100	
Porter, Levi B.	7	200	
Robbins, W. D.	15	1,250	
Robertson, R. G.	40	250	250
MONTANA.			
Deal, Jr., Wm. W.	19	1,656	
NEBRASKA.			
Atkinson, Thos.	25	1,100	
Hawks, E. A.	6	326	
Kinnison, D. B.	10	655	
Michelson, Peter O.	5	125	600
Palmer, C. B.	14	1,500	
Warner, A. B.	8	100	1,730
NEVADA.			
Patton, J. E.	124	566	500
NEW HAMPSHIRE.			
Smith, J. P.	20	627	
NEW JERSEY.			
Carr, E. G.	20	250	1,600
Grover, George	63	2,200	1,600
Hann, Albert G.	23	1,400	400
Prankard, G. P.	7	5	30
NEW MEXICO.			
Metcalfe, O. B.	400	1,100	18,000
NEW YORK.			
Anderson, Everett	10	700	
Avery, H. I.	10	125	180
Billard, Mrs. Buell	13	125	
Bolling, Wm.	28		400
Cogshall, D. H.	415		14,000
Coon, Morris	30	640	160
Gutekunst, Emil W.	34	1,825	50
Gutekunst, Walter	19	875	
Hayes, Wm. J.	1	170	

	No. Col.	Lbs. Comb.	Lbs. Ext.
Janack, Jr., John	21	300	
Jewett, Fred C.	34	1,300	300
Nichols, Homer H.	4		60
O'Brien, Dan	8	80	
Redderit, E.	17	425	375
Roys, F. C.	67		1,500
Yates, Theodore	140	5,500	1,700
NORTH CAROLINA.			
Jones, G. F.	10	500	100
McGuire, G. W.	88	300	700
OHIO.			
Heck, Jacob	10	150	
Irwin, William	65		
McBride, F.	25	800	
Moore, W. R.	12	30	600
Roush, V. V.	74	3,000	
OKLAHOMA.			
Gardiner, N. Fred	2	55	
OREGON.			
Ahlens, Herman	176		400
Boyle, Wm. I.	38	2,400	
PENNSYLVANIA.			
Beck, L. C.	42	493	213
Bielow, J. F.	150	8,400	
Buchanan, H. S.	9	160	
Burns, John	40	650	600
Edwards, G. H.	2	80	
Hopkins, H.	67	1,400	800
Hull, J. D.	35	1,200	
Hunsberger, A. C.	47	2,600	
Inghram, Robert	4	120	
King, T. Frank	6	200	260
Kline, J. E.	50	1,500	50
Miller, G. E.	51	1,500	500
Peck, Sidney A.	21	880	
Turner, Elmer E.	95	6,700	400
Wentworth, G. N.	66	1,800	
White, C. E.	7	150	
Will, D. W.	17	465	
Williams, W. S.	36	1,500	
SOUTH DAKOTA.			
Dahl, A.	4		21
Syverud, L. A.	49	1,700	700
TENNESSEE.			
Hix, B. C.	5	175	
Murphy, E.	10	25	575
TEXAS.			
Murry, H. D.	54	1,236	1,700
Sueltenfuss, Otto	77	3,655	3,205
Williams, Fred	10		500
VERMONT.			
Cram, M. F.	50	1,500	300
Fisher & Son, H. D.	41	1,000	
VIRGINIA.			
Oglesby, N. P.	37	1,000	
WASHINGTON.			
Hopseger, Chas. W.	47	2	398
Peters, John J.	18	100	
Rice, O. K.	25		580
Smith, E. W.	10	20	
WEST VIRGINIA.			
Mersing, E. C.	90	1,200	800
Shockey, Ira	28	300	
Thatcher, Wm. A.	45	500	
WISCONSIN.			
Barnes, W. D.	20		400
Barrette, Mrs. Paul	35	500	
Bergstrand, Chas. O.	3		246
Blunck, Fred	5		80
Brown, J. E.	84	2,500	780
Church, L. F.	30	300	
Cochens, John	52	630	600
Duax, E. A.	16	730	744
Goodnow, V.	14	250	448
Greenwood, H. E.	90		5,500
Hansen, James	18	783	
Hatch, C. A.	125		2,500
Hanselman, E. H.	125		5,000
Heurkens, Herman	42	110	2,610
Holtman, G.	360	8,000	300
Koller, John	112	125	680
Lehmann, Ed.	146	100	5,000
Lockwood, Fred	23	700	500
Matzke, F. E.	50	1,500	1,500
McClain, Archie	18	125	400
Parman, L. W.	22	950	1,034
Piermer, John W.	62		1,200
Plumb, Mrs. J. C.	25	631	50
Savage, H. W.	81	170	40
Stoffel, Frank	157	3,500	500
Thorstad, J. E.	48		1,300
Voigt, C. H.	65		50
Wagner, L. E.	58		1,400
Wilde, Wm.	84		2,100
Witter, Lafayette	9	500	
CANADA.			
Bridge, A. M.	38		350
Coddington, John H.	2		250
Verret, Jacques	115		4,496

National Convention at Detroit

Secretary Hutchinson is beginning early to work for not only a good convention this year, but also to get a large

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attendance. We hope it may be a great one in both ways. Here is his letter:

WHAT SHALL BE DONE AT THE NEXT NATIONAL CONVENTION?

We have laid the foundations for the next National Convention. We have selected the city (Detroit) in which it is to be held, secured the Wayne Sun Parlor for holding the meeting, and decided upon the dates October 13, 14 and 15. We know where and when the convention is to be held, and can begin to lay our plans accordingly.

The next step is the arrangement of a program. Of course, the burden of this work will fall upon the Secretary, but he can be greatly assisted, and the convention made vastly better, by the help, hints and suggestions of the members. It is with this end in view that I am going to outline briefly what I have in my own mind, then, as is the case at a convention, when a motion has been made, we will have something "to talk to."

I would suggest that the first session be held in the evening, and wholly devoted to a discussion of diseases of bees. I have made application to the authorities at Washington to send a scientist to the meeting, probably Professor White, who can take up the matter from a scientific standpoint, show how these diseases are studied by the use of cultures, and illustrate the matter with a stereopticon if possible. Then have some one of the Inspectors tell how a practical bee-keeper can detect foul brood. He, too, might use stereopticon pictures in giving his description. Ernest Root has promised to furnish his stereopticon, if one is desired. Next, let another Inspector give the best methods of treating diseases. Then wind up the evening by a general discussion of the subject.

Another factor that has been suggested to me, is that of having at least one debate during each of the day sessions. I believe this is something that has never been attempted at any of the meetings of the National. Suppose, for instance, we take up the size of the hives. Let us say: "Resolved that a 12-frame, Langstroth hive-body is more desirable, in the production of extracted honey, than an 8-frame hive-body." Get some experienced, competent man to take the affirmative, and some other equally good man, who believes in the 8-frame hive, to take the negative; let these men be chosen early in the season, secure their consent thus to enter the arena, then they can have months to prepare for the contest, and we common folks can sit back and enjoy the "flow of words and the feast of reason."

As a rule, I think that most of our conventions are held down too closely to the steady grind of hard discussion, session after session from beginning to end of the meeting. I think at least one evening session might be very profitably and pleasantly devoted to something in a lighter vein. I suppose that a banquet followed by responses to toasts would be in this line, but there are objections. First is a cost, which would not be less than \$1.00 a plate. This is not really serious, although there might be some difficulty in determining in advance how many would participate, so that preparations might be made on sufficient scale. I may be old-fashioned, but the real objection, in my mind, is the late hour at which we would be compelled to begin our responses. The regular supper would have to be out of the way before the dining room could be used for spreading the banquet, which would require some little time. If we finished our feast at half past nine we would be fortunate indeed, and it is likely that midnight would still find most of us out of our beds. To persons accustomed to late hours this would mean nothing, but most of us bee-keepers are plain country folks, accustomed to early hours, and to be up half the night means extreme dullness, possibly a headache the next day. To attend a convention at some distance from home is more or less of a strain, at best, and every precaution ought to be taken that the members should feel just as well, and as bright, as they possibly can; otherwise, there is little enjoyment. My idea is that we cut out the banquet part, the feast at 9 or 10 o'clock at night. Just take our usual supper at the usual time, then meet at the usual time, 7:30 p. m., or whatever time we think best, and begin at once the responses to toasts or sentiments, finishing up at 9 or 10 o'clock. Then the next day we will feel as well as ever, ready for business, and discussions, and able to enjoy ourselves. I would suggest that 8 or 10 of our best speakers be chosen, and appropriate topics be chosen for each, early in the season, that there may be plenty of time for thought and preparation. I would announce the topics in advance, also the list of speakers, but I think I would leave it a secret, as to which speaker each topic would be assigned, until the announcement was made by the toast master. I think the speeches

ought not to exceed 10 or 15 minutes—the right man can say a lot of good things in 15 minutes.

Another feature, for which I shall put forth my best efforts, is to secure the greatest possible attendance of bee-keepers' wives. It may be just a little out of the line of bee-keeping, but I hope I may be pardoned for saying that, naturally, business takes men out into the world. A man has the incalculable advantage of a great variety of experiences, and freshness of view. He is continually coming in contact with new people, new things, and being moulded by a vast number of forces which never touch the wife in the quiet home. I believe most women feel this terrible depression of the monotony of their lives, the lack of that stimulus which comes to man from constant change. Let us begin now to plan for the making of a big break in that monotony next October. There is a saying that good works and charity ought to begin at home, so I have secured a promise from Mrs. Hutchinson that she will accompany me to the convention next October. Then I secured a similar promise from my brother's wife. Then I wrote to a few near acquaintances, such as Manager France, President Hilton, Ex-President Aspinwall, and asked them if they would bring their wives, and all replied that they would do so. My friend Muth, of Cincinnati, also writes me that he will bring Mrs. Muth.

I think I would have at least one good essay each session, then the debate, as already mentioned, and finish up with the question box,

which I hope will be contributed to from all over the country, by those who are so unfortunate as to be unable to attend.

One other little point: As everything promises to be on a larger scale than usual, I have already made arrangements for the use of a camera that will take a picture 14x17 inches, and I hope to make a group picture that every member will be proud to hang upon the walls of his home. I shall see to it that each person of the group has a number upon the lapel of the coat, and a printed list giving numbers, names and addresses, will accompany each picture, then all can see who is who.

What I have written simply gives a glimpse of the program in embryo. Nothing is definitely settled. I shall do my utmost to make the convention one of the most enviable, the best and most really helpful, that the Association has ever held; and I earnestly request every one who has any interest whatever in the matter, to write me a letter full of advice and suggestions. Tell the subjects you would like discussed, and the persons you would like to have discuss them. Suggest topics for the responses to toasts or sentiments, and the men you would desire to hear respond. Tell me what subjects you would like to hear debated, and the men you would like to hear do the arguing. If I have suggested something that does not please you, let me know, giving reasons why. Take hold, right now, and do your share in making the coming convention a grand success.

W. Z. HUTCHINSON.
Flint, Mich.



An Octogenarian Bee Editor

Signor A. DeRauschenfels, the editor of the Italian bee-paper, "L'Apicoltore," was 80 years old on March 1, 1908. His paper is one of the most progressive in Europe. It is published at Milan, Italy.

Mating Effect on the Drones

We have received the following in reply to an article in the February number:

"After reading what T. W. Livingston says, on page 49, I can more easily understand how he has drones colored by the mating of the mother. He says that his mismated queens after a time turn darker, so that the difference in color is plainly apparent. As the drone depends only on his mother for his color, if Mr. L. has that kind of queens which change color after mating, of course it is nothing strange for the drones to follow that change. As I have never seen any change in the color of my queens after mating, naturally, I would see none in the drones."

E. V. PAGAN."

Borage as a Honey-Plant

In Praktischer Wegweiser, page 280, Herr Willhelm says that in response to the general cry, "Sow borage," he has been sowing it for years and now has it in abundance. How the bees do hum upon it! But alas! now that he has it in such abundance that it shows its character in the surplus honey, he finds it such as no customer wants, and says it is black as a certain "gentleman" with

whom bee-keepers do not generally care to have dealings. The task of getting it now rooted out is a difficult one.

From this we may take warning. If bees are found working very eagerly on a few plants of a certain variety, before largely increasing the area of such plants it may be well to learn something of the character of the honey secured from them.

Bees Absconding when Shaken

T. J. Barringer says this in Gleanings in Bee Culture:

"It has not been clearly stated in the journals that it is necessary to cage the queen when the bees are shaken on to new combs. One of our bee-men of Tulare, a Mr. Gambel, had 78 colonies shaken on frames of foundation for foul brood, and none of the queens were caged; 75 out of the 78 swarmed, and went to the woods."

This is probably quite unusual, but it is well to be on the lookout.

Got a Bee In It

Auntie—Now, Tommy, take my bonnet up-stairs for me, there's a good boy.
Tommy—Boo-hoo! I don't want to!
Auntie—Indeed! And why not, pray?
Tommy—"Cause mother told me you'd got a bee in it.—The Sketch.

Minnesota State Bee-Keepers' Society

Not long ago inquiry was made as to whether there was any bee-keepers' society in Minnesota. There seems to be a State society with such favorable

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terms for membership that it surely deserves, as it probably enjoys, a flourishing membership. The annual payment of \$1.25 not only secures membership in the State society, but in the National as well, and also in the Minnesota State Horticultural Society.

A circular of the Minnesota State Society says:

"From the Horticultural Society we get literature in pamphlet form every month, and at the end of the year the same in book form, and our programs and convention reports printed with theirs; also two plant premiums, if the Secretary is notified before April 1st."

The membership fee may be sent to the president, Scott Lamont, Jarrets, Minn., or to the secretary, Rev. Chas. D. Blaker, Sta. F., Minneapolis, Minn.

Florence Makes and Paints Hives

I am sending you a picture of my 19-frame hive with 3 supers standing on



Florence Bellamy.

edge on top of it. Each super holds 65 sections, or 195 for the 3; 170 being filled with honey and sealed over, and 7 filled on one side and half filled on the other side.

I am enclosing also a picture of my 12-year-old son, "Jimmie," with a hive that he made himself; and another of my 11-year-old daughter, "Florence," with a hive that she made and was painting when the picture was taken.

Syracuse, N. Y. H. F. BELLAMY.

[The picture in which "Jimmie" appeared, and also the one showing the 19-frame hive, were too dim to engrave.—EDITOR.]

The Plural Queen System

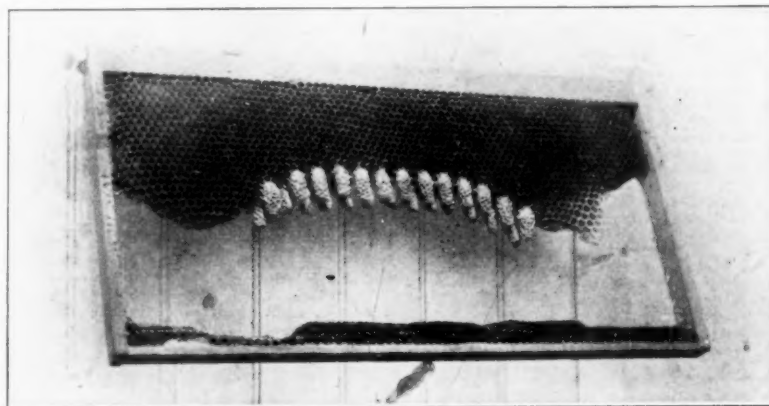
The spring of 1907 was, in this locality, the worst I ever knew. Feeding, uniting, and all other methods I knew of for obtaining strong colonies fell far short of the desired results. Rev. Langstroth said, "Keep all colonies

strong." That is good advice, especially so where one is rearing queens, because weak colonies mean weak queens.

After all methods that I knew of had failed to give me colonies of the desired strength, I began experimenting on the plural-queen system. The result of my efforts is shown in the cut. There is nothing new or original in my method; it is simply a combination of others

hole in the Chambers device. Now remove the queen from the cage, shake the bees down in the box and drop in the queen. Then put into the empty body over the strong colony a frame of hatching brood, and 2 of honey.

Take the box of bees that now contains the queen, and dump them into the prepared body, and put on the cover. Keep adding hatching brood till the body



Batch of Queen-Cells from Plural-Queen Colony.

which I have learned from the pages of bee-papers.

I first select the strongest colony on hand; then the weakest one. I find and cage the queen of the weak colony, then after forcing the bees to fill themselves with honey, they are shaken into a box that has the two sides covered with wire-cloth. The box containing the bees is now placed in the shop. Now take the brood from the weak colony to the strong one, remove all frames from the strong colony that do not contain brood, and place the brood from the weak colony in their place. The hive is now closed and left so until even-

is full. When the bees become acquainted I remove the Chambers device and substitute a queen-excluder. When the colony reaches the desired strength I put the Chambers device on, then an empty body. In the added body put 3 frames of brood, and a Doolittle feeder, close the flight-hole, and draw the slides, and feed a little warm feed, which will draw the young bees up. In about 3 days close the slides, cut all cells that have been started and insert a frame with prepared cells.

When the photo was taken, the 6-story colony contained 5 queens. The other small picture shows the result



Apiary of J. Donaldson and Plural-Queen Colony.

ing, when the cover is removed and a Chambers cell-device (as described by J. E. Chambers, in *Gleanings*), and an empty body placed over the brood-chamber; close the slides, and open the flight-

of their work as cell-builders. You will notice the cells are attached to the bottom of a brood-comb instead of a stick. I got that idea from Mr. Doolittle at the Jenkintown Field Day. A

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questioner asked him how many cells he usually placed on a stick early in the spring. He replied, "None; I put them on a comb." I went home and tried it, and find that I get a larger percentage accepted, especially if the comb contains sealed brood.

J. DONALDSON.

Moorestown, N. J., Dec. 24.

Views of D. J. Blocher's Bee-Yards

View No. 1, on the first page, shows part of a Caucasian yard 3 miles from home, and located at the cross-roads. The nearest hives to the road are only about 2 rods from the track. I tried the Caucasian bee 2 summers and will now quit breeding that race of bees, and Italianize them. They are nice bees, but are objectionable here for various reasons. First, in spring and fall they are inclined to rob. Second, they are inclined to swarm. Third, they fasten many of the frames to the front of the hive at the bottom. One colony filled up the front with a gray ash sort of propolis, and just left holes to crawl through. Fourth, they do not gather as much honey as the Italians. I have given them lots of room and they swarmed in spite of the room. I confined them to small room below and could hardly get them into the supers. I have decided to quit breeding this bee.

View No. 2 is one of my Italian yards. I run 3 Italian yards and one Caucasian. But now I will have 4 Italian yards. I have the darkest bees here. I pay \$10 a year for the ground, but haul all home to winter in the cellar. All the yards are so located that I can call at all of them and get home in half a day. The farmers are beginning to sow alsike clover, so I do not think it necessary to locate them far apart. We try to have our yards graded as to color, and so watch results. The yellow bees so far are doing as well as the darker ones, and are more gentle. The home-yard is in the sun, and so I enjoy going to 2 out-yards where there is shade to work in. I never set a hive in thick shade for honey-gathering. In the sun has always proved best for me in every way except for operating, and I select the cooler part of the day for that, except in a few cases.

Stephenson Co., Ill. D. J. BLOCHER.

How to Get Bees in a Hive

J. W. Jackson, of the new and enterprising State of Oklahoma, writes:

"Enclosed find a clipping from the bee-department of the California Cultivator, which seems to show they don't take bee-papers out West. Send him a sample copy."

The clipping, replying to a question, reads as follows:

"A practiced bee-keeper to whom the above question was referred, says he saves swarms of bees which go into trees by setting hives a little distance from the tree in which he puts comb cases, with molasses at the mouth of the hive, and also in the hive. When the bees discover the hive they will go to work, and as soon as this is done he smokes the tree until the bees leave it, which they will do in a short time and take

to the new hives. He then removes the honey, being careful to leave enough near the mouth of the hive to keep the bees from starving until the new hive is established. While the smoking process is under way, a noise at the new hive, made by heating a tin pan, will attract the attention of the bees and direct them to their new quarters. Care must be taken to protect the body from the angry bees meanwhile."

There's richness for you! The phrase "heating a tin pan" is probably a misprint for "beating a tin pan," but one is just as good as the other.

"Grandpa Hutchinson" Telling Stories

The picture shown herewith appears in the American Bee-Keeper for March.

the present time, and drawn all that I dared upon my imagination, and still the call is 'more,' 'more.' And then the questions! I never before realized that there were so many things that I did not know.

"By the way, the little boy has taken me for a pattern. The strongest argument that he can bring to bear is that 'Grandpa does that way.' For instance, his mother would like to part his hair in the middle, but he resents it—'Grandpa does not do that way.' When asked what he will do when he grows up, he says, 'Keep bees, just the same as Grandpa does.' He has been with me to the apiary, time and again, and has already received his baptism of stings, taking it bravely. He can nail up frames, and he and I have already made



"Grandpa Hutchinson" Telling a Story.

Referring to it, Mr. Hutchinson says this:

"Perhaps I may be allowed to indulge slightly in a grandparent's prerogative, and say just a few words about those 6-year-olds leaning upon my knee. They are the eldest children of my twin daughters, and they pretend to live across the street from us, but it is an open question whether they do much more than go across there to sleep. The picture is no unusual scene gotten up for the occasion. It is enacted daily in the office of the Review. What a love we mortals do have for stories! I have gone back to my very earliest recollections and raked and scraped every little item that I could recall down to

a bargain that when he is old enough and I am too old, he shall have the Review. Seriously, stranger things than that have happened.

"There is a saying that, 'Youth hopes; old age remembers,' and I have often noticed that an old man has no greater pleasure than that of recalling the scenes of his youth. It must be that I am still in the golden mean, for while I do sometimes recall with pleasure the 'good old times when I was a boy,' there still run in my veins the hope and fire of youth."

Surely the picture is a delightful one, and we are glad to present it to our readers. The expression on the faces of

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those two dear children is perfect. It isn't often that anything so natural, and so beautiful, can be gotten up for the camera to catch. There is something so sweetly restful and satisfying in the

appearance of their faces, that it seems almost impossible to cease admiring them. "Grandpa Hutchinson" must have developed into a wonderful storyteller as well as bee-keeper.

this the old hive with its brood, all queen-cells being removed. Then you ask, "After the brood is all hatched, is the old hive taken away or placed at the bottom?" Neither; it is left above, and becomes an extracting chamber. You see the plan fits extracted honey. The plan of piling up, with abundant ventilation, (only one queen in the pile) also fits extracted honey; but there is no trouble, as you fear, from the rain getting in between the stories.

It might be well worth your while to try the plan on page 70, under the head of "Prevention of Swarming."

It is not easy to say why you should have so much trouble in uniting bees. Do you really think cross bees are worse than gentle ones about uniting? Our bees are cross enough, and there is seldom any trouble about their uniting. But it makes a difference how and when it is done. When bees are busy gathering there is no trouble. In one case you dumped the bees in front of the hive you wished them to enter, drove them in with smoke, and they were slaughtered. Are you sure the bees of both lots were well filled with honey? That makes quite a difference. It would have helped, too, if you had dumped in front of the hive *both* lots of bees, letting both run in together. Being confused by such a proceeding, they would be busy thinking about finding their home rather than killing the other bees.

Glad to hear from you again.



Conducted by EMMA M. WILSON, Marengo, Ill.

Is She Wrong?

Miss Trevarrow says this in the Canadian Bee Journal:

"How is that now? The side of a cell is the bottom, the opposite side is the top, the bottom is one side and the top the other. If this be wrong, please correct in your next issue."

Honey as Food.

Late investigations lead to the belief that honey, the earliest form of sugar that human beings could obtain, is still about the best. It is counted, as the result of these experiments among the most nutritious and delicate of foods.

Not only does honey seem to act as a cure for diseases of the throat but as a somewhat remarkable purifier of the blood. The only obstacle in the way of its more general use appears to be that many people cannot eat it without stomaching pain.—Prairie Farmer.

Cleaning and Casing Honey.

While I was at Mr. Gill's their daughter, Mrs. Marian Fuller, of Beloit, Wis., cleaned and cased 125 cases of honey from 7 to 5 o'clock with half an hour for noon. She had the double-tier case, 24 sections, 17x4 1/4. She had to wipe the glass, place 8 strips of wood in position, and put paper in, and she had to carry a good deal of it into the next room; also had to wait for cases part of the time. I think she could clean and case 150 in 10 hours with the single-tier case, and no waits to make and no sticks to space.—F. J. FARR, in *Gleanings*.

Putting Comb Foundation in Frames.

Mr. T. P. Robinson, speaking of putting foundation in frames, says in *Gleanings*:—"It is often claimed that it is a slow tedious job to put it into the frames. This is the case, without a doubt, unless a person is fixed for it and acquires some skill in putting it in. I must say that I am no adept at this art, but Mrs. Robinson is, and can put in foundation in a whirl. I do not wish the bee-folks to think I am lazy, and that my better half is making the living, when I say that Mr. R. puts all my foundation into the frames. We use a VanDeusen wax-tube in the work; so, to redeem myself, I must make known

the fact that I bring supers of empty frames, take away the full ones, imbed the wire, keep the wax warmed to the right heat, keep foundation handy, etc. You may think this is an easy job for me to do while Mrs. R. puts in the foundation. It isn't so easy when she puts in 120 Hoffman frames per hour, or two per minute. She can do this all day long, and put in some 1200 sheets of full-size brood foundation. To make the matter of more importance, she much enjoys the work."

Upon which Mr. Scholl comments:—"The above is quite a good record for a woman." "For a woman," indeed! But then the comment is well enough—for a man.

A Contrast in Honey Results.

At the Massachusetts convention as reported in *Gleanings*, page 159, "Miss Cutter, of Princeton, gave her experience with the seventeen-frame Latham hive from which she obtained 111 lbs. of honey while her other colonies gave her no surplus."

Honey Gargle for Sore Throat.

Prepare 1/2 pt. strong sage tea and add to it 2 tablespoonfuls each of strained honey, strong vinegar and table salt, and 1 rounding teaspoonful cayenne pepper. It is better to steep the pepper with the tea, and strain before adding other ingredients, then bottle. Gargle four to six times a day.—Mrs. Jennie M. in *Farm and Home*.

Producing Bulk Comb Honey.

Mrs. Frances Thompson deserves, and is hereby given, very hearty thanks for sending such full and satisfactory particulars when making inquiries. Some seem to think it is only necessary to say, "I got no surplus honey last season; what was the matter?" that they may then get minute instructions just what to do to get a bouncing crop at the next harvest.

Mrs. Thompson, your problem of getting comb honey in frames to be cut out, and at the same time to keep down increase, is not the easiest in the world. You ask about the Scherzinger plan. By that plan, when a colony swarms the swarm is hived in a lower story, over which is placed an excluder, and over

Therapeutic Value of Honey.

"According to Dr. Pol Demade, who writes on this subject in *La Réforme Alimentaire* for January, honey occupies, or should, at least, occupy, an honorable place in therapeutics. Since up to the present date this right has not been generally accorded to it, the Doctor draws the attention of his confrères to certain experiences of his own, and also gives his reasons for the conclusions to which he has been led. He relates that the Lady Superior of a certain convent asked his advice about a tiny, emaciated baby. The child, which lay in its mother's arms, was 9 months old, and gave one the feeling that it had but to close its little eyes for death to assert itself. The infant was suffering from diarrhea, which had refused to yield to all remedies tried; the poor little creature was emaciated to an extreme degree, with black rings under the eyes, and the lower stomach fearfully large. The poor sufferer had no appetite whatever, but was in its place plagued with almost incessant vomiting and diarrhea.

"This sickness, it appears, the French and Flemings call 'old man.' 'What,' says Dr. Demade, 'could a medical man hope to do with such a wretched specimen, which any breath might send into Paradise? And yet there stood the mother pressing this remnant of life to her heart, her ninth child, which she told me she loved better than all the rest.

"I ordered her to feed the infant on honey and water, nothing else absolutely, for 8 days, and, turning to the Lady Superior, I added that if the child were still living at the end of that time, to give goat's milk and water in the proportion of 1 to 2 parts, respectively. I dismissed the case from my mind, since

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I did not hope for anything better than death as a release.

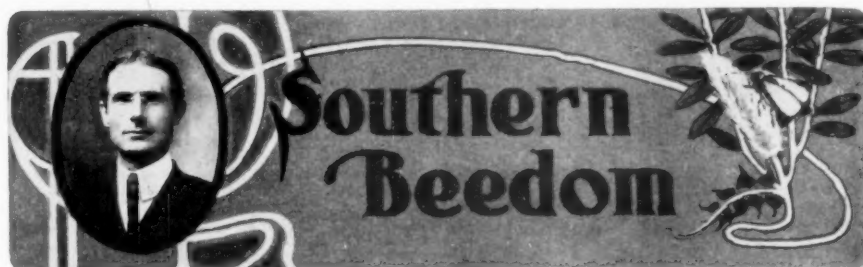
"What my astonishment was when at the end of 3 months I was shown a healthy-looking, well-nourished baby, with an excellent appetite and regular habits, and its stomach reduced to normal proportion, may be easily guessed. Here was my little wretched creature nothing less than metamorphosed by means of the honey. And I learnt that the mother had used my remedy to other children who suffered from stomach disorder with equally good results. I profited by her experiments, and I have since found the use of honey in any disease of the digestive organs a most valuable agent."

"The Doctor adds that he has tried honey as a remedy for that most obstinate of all diarrheas which follows an advanced stage of pulmonary consumption, and even with young animals, and has in every case been rewarded by seeing the diarrhea stop, and a desire for nutrition take its place. The list of chemical compounds used to clear the intestinal canal, with more or less good results, some of which work other mischief, is a long one; honey, which is at once cleansing and nutritious, ought to take their place. And it may be that this is only one of the therapeutic uses out of many to which it might with advantage be put.

"Dr. Pol Demade argues that it should be easy for any practitioner with com-

mon-sense to recognize the reasons for this high value possessed by honey. It is, in the first place, a most extraordinary natural product. It is a sugar, but not of the ordinary kind. It is antiseptic, almost free from fermentation, and withal capable of almost instant assimilation in the organism with next to no exertion on the part of the digestive agents. Ordinary sugar is saccharine, whereas honey is a glycoside. The former ferments readily, and has to be turned into glycoside by the action of the saliva or some of the other digestive juices before it can be assimilated. In the case of a healthy stomach, saccharine can be dealt with at no great expense to the system; but when the digestive organs have been weakened by disease, and the whole nervous system is extra-sensitive, sugar should be withheld and honey given."

The foregoing article taken from the Vegetarian Messenger ought to be of especial interest to those of the sisters who have anything to do with looking out for what goes on the table (and which of us has not?), but especially those who have the care of little ones. It is not likely that such remarkable results as here depicted would follow in all cases; but it is entirely possible that some other little lives might be saved by following a like course. And would not a little less sugar and a little more honey be for the health of all, old as well as young?



Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

The Divisible Brood-Chamber Hive.

(Illustrations Courtesy of Gleanings.)

Again I have a complaint to make. A number of letters inform me that I have never given "a description of the divisible brood-chamber hive I use, nor dimensions of the different parts, etc., so that they could be made after such explanation." In response to these I shall once more use space in describing it briefly.

The hive and its different parts can be easily obtained of any leading manufacturers of bee-hives. Several such similar hives are already catalogued. But for a few slight differences they are practically the same. In the cut is shown the outside appearance of my hive. It is made up of $5\frac{3}{4}$ -inch shallow frame cases, taking Hoffman frames $5\frac{3}{8}$ inches deep, with $\frac{1}{2}$ -inch top-bars $\frac{7}{8}$ -inch wide. All the cases, whether for brood-chambers, extracted honey, or comb supers, are alike throughout, and this is one of the valuable features about this hive. Hence, all are interchange-

able. The same frames are used for brood-frames as when producing bulk comb or extracted honey. The same cases are used for section honey, arranged with sections, of course.

This makes the simplest and yet the most expensible hive as well. It can be enlarged for the strongest colony or de-

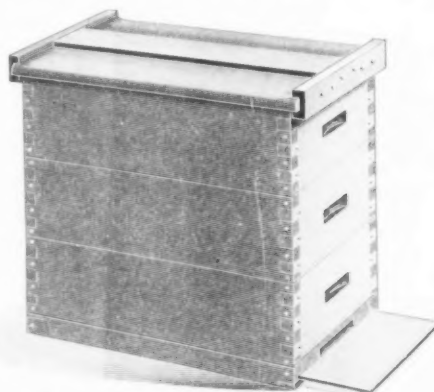


Fig. 1.—Divisible Brood-Chamber Hive.

creased in size for the weakest, and, unlike the full-depth hives, these shallow ones permit of a more gradual expansion to keep pace with the increased size of the colony.

In Fig. 2 is shown a single case with the shallow frames. This is exactly the same as the $5\frac{3}{4}$ shallow frame supers for extracted honey listed in supply catalogs, except that my frames have a narrow $\frac{7}{8}$ -inch top-bar $\frac{1}{2}$ -inch thick. This makes a stronger frame and the top-bars are less liable to sag, which nearly all my old frames have done. It also provides more space between frames.

This shallow super is used extensively in the Southwest for producing bulk



Fig. 2.—Deep Super with $5\frac{3}{4}$ Inch Frame.

comb honey, and is also coming more in vogue for extracted-honey production, above regular full-depth brood-chambers. In producing surplus honey it is often best not to put on full-depth supers, as it provides more room than the bees can occupy at once, while they could easily fill one of these supers. When the work is well along another one may be given below the first one.

For section comb honey the supers are arranged with the regular 4x5 sections between our Hyde-Scholl slotted separators. With this super fancy comb honey can be produced much more readily than with any of the super combinations now on the market, as we have tried all of them for several years. This is due to the freer communication in the supers, especially the transverse opening just opposite the upright edges of the sections. In other separators the communication is cut off just at this point, and

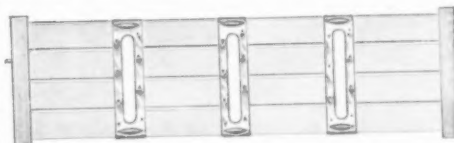


Fig. 3.—The Hyde-Scholl Separator.

besides preventing freer communication here, it causes the bees to round off the combs in each section, and retards the sealing of the cells in the last row next to the wood. With the above super such is not the case, but a row of sections represents a solid comb when completed, with upright cleats in the comb. There is free communication all along the comb, and from one comb to the other, hence the super is not cut up into so many small boxes.

Any favorite, standard size bottom-board and cover may be used with this divisible hive, as all the cases are the same as the regular L. hives, 16 x 20 inches outside measurement, for the 10-

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frame size.

Please remember, dear reader, that I have none of these things for sale. I am not in the supply-business, neither have I an axe to grind, and my harping on this question was due only to the many letters that were answered in this way. The hive parts can be obtained from any supply-manufacturers as regular goods, except the frames, which can be ordered made after the dimensions given.

A Wind-Mill Hive-Plant in Texas.

The matter of providing our bees with a nice, pleasant home that will turn water and wind, is of great importance to the man who has hundreds of colonies of bees to provide for, when we consider the present ruling price for manufactured hives. I found after my bees were running into the hundreds of colonies, and constantly increasing—a feature I courted—that to buy ready-made hives was a fearful drain on my bank account—a much greater drain than I was pleased with, or intended to allow. I was a natural-born mechanic, studied the matter all day, and dreamed of it at nights when a boy. When I became my own man, I proceeded to make applications of various characters along mechanical lines. I straight-way proceeded to make anything that I chose to make, out of iron, steel, or wood. Thus it will be seen that I had a store-house of knowledge on which I could draw at will. Therefore, to allow a little problem like a bee-hive plant of a novel and practical character bother me for a moment was a matter I never stopped to reflect upon, when the time came for me to be in need of such an adjunct to my apiarian equipment.

I began to care for bees when I was a boy 16 years old, and grew up in the business, or with the bees, if you wish. I never thought or intended to make a bee-man. I became a bee-man by chance, step by step, day by day, year by year, until I found my bees running into the hundreds of colonies, and my output of honey running into tons annually.

Furthermore, I found that orders for honey sent me annually was twice that of my output, therefore I resolved to enlarge my apiaries, and install new ones until I filled my orders for honey, or had all the bees that I could manage.

Finding myself in this sort of predicament, of needing many hives and hive-parts annually, I decided to manufacture them, and proceeded to execute my decision, as I could not afford, to my mind, the price for hives and the freight.

It was a matter of little consequence to install a circular saw to make hives and frames, but the power to pull or operate the saw was quite another thing.

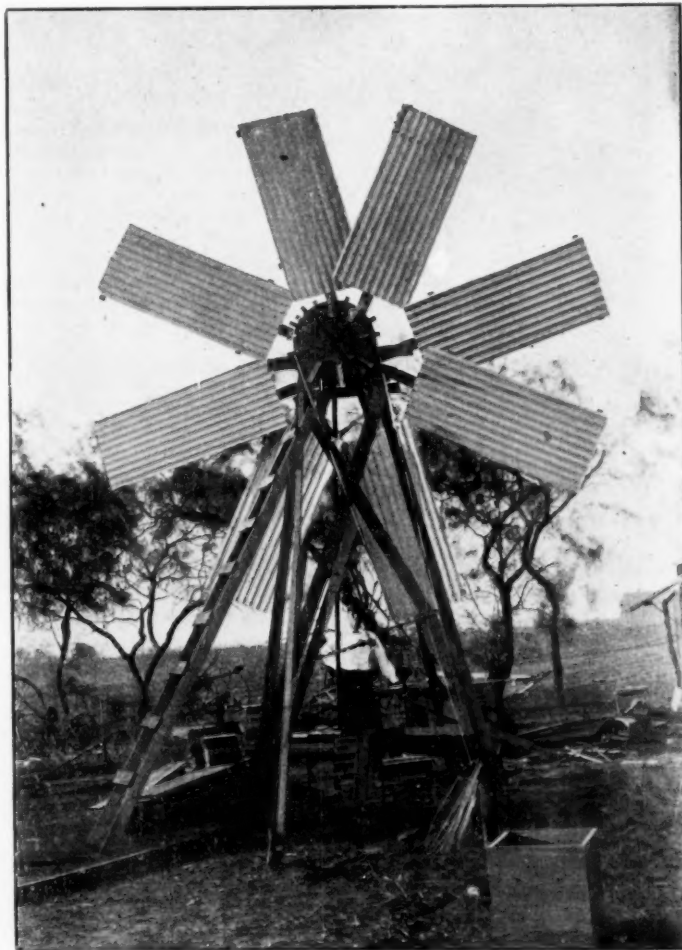
It would cost something like \$100 to install a gasoline engine to operate the saw. That wouldn't do—too much money for the engine, then it eats fuel every day, additional. I could put in a horse-power for \$30, to which I could hitch my farm mules and do the work of running the saw, but there would be a mule driver needed—an additional \$1.00 per day for the driver; \$30.00 was too much for power, with wear and tear on mules, feeding, and a wage for a hired man. None of these modes of power appealed to me because of expense.

I live on a big prairie of Texas, 40 miles from water, and to install water-power was a "long shot at a buck in Buncombe"—out of the question. I knew that there were hundreds of thousands of horse-power going to waste over my farms some days, in the wind, that if harnessed properly would pump the St. Lawrence river dry, and make a stepping stone of Niagara Falls. I decided to harness about one billionth part of it and have it make bee-hives for me.

The wind-motor illustration shows the simplicity and practicability of my decisions. This outfit, for material, cost

screws. A pin is put through the axle for one of the spokes to hold to. At the center a notch is cut in the center of the scantling to fit around the axle. A short piece of scantling is cut to fit the other side of the axle, and two bolts are put through to bind the scantling to the axle. A strong wire goes around the wheel, secured at the outer circumference to each spoke, making all pull on the one spoke secured by the pin. The axle revolves on the bolsters of the frame in iron boxings, with a pin on each side of the boxes through the axle.

Courtesy of Gleanings.



Robinson's Home-Made Windmill for Sawing Hive Lumber.

less than \$10. Should I say it cost less than \$2 for what it is doing, it would be hard to believe, would it not? Such is the case, however, when it is understood that the whole affair is built out of house-constructing material, and not at all damaged for house-building purposes, to which use I will put it as soon as I am through making hives. All the loss there is in the mill is the main axle, pulleys, and cleats on the sail-spoke, clamps on the spokes at the axle, and bolsters on the post or frame. The mill is self-explanatory. A 2½-inch gas-pipe serves as spokes to the wheel. The wind angles for the sails are cut in the scantling for the cleats, on which is secured the corrugated sheet-steel roofing with

The mill is set north and south. The skeleton frame on which it rests is braced fore and aft. To make it more secure it is fastened to the ground with strong wire. Power is transmitted to the ground by means of a rope belt from the pulley well in view. A 1-inch gas-pipe 18 feet long serves as a line-shaft from which the power is applied to the saw, by a pulley put on the end of the shaft under the saw-table. A friction-brake is on the main axle, back out of view, which gives the operator perfect control of the mill at all times, to stop and start it at will.

The mill is geared 40 to 1, which in a moderate wind gives the saw a speed of 1-3 to 1-2 mile per minute. The saw-

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table is constructed with a movable top. The lumber is secured to the table top, the whole being pushed to the saw, and you have to push, too, when the wind is blowing.

I made the whole outfit here at my shop except the saw, and would have made that also if I could have had a piece of suitable steel.

Any one with moderate mechanical ability and good judgment can construct this mill, as somewhere near right will do, but when you go to making the pulleys and saw mandrel to run true and correct, without the aid of turning lathes and machine auger, you have to be a mechanic and do things right.

The material for the construction of a 10-frame hive, complete with super, 20 frames, nails, wire and paint, costs about 65 cents. How does this compare with the Northern made hive of the same kind quoted at \$2.30 each, with no paint furnished? The same hive laid down here will bill out thus: One ten-story hive, \$2.30; freight on the hive, 30 cents; paint for same, 5 cents. Total, \$2.65.

This shows a difference of \$2 per hive in favor of the wind-motor saw. I can easily make 20 complete hives in a day,

at a low estimate, which shows a net saving of \$40 per day. The windmill paid for itself the first 4 hours that I ran it.

I have nothing against the bee-hive manufacturers at all. They are badly needed, and are doing a good work, but it is not necessary for me to pay \$2 per hive extra just to be changing money from place to place, when the mill will do the work, costs nothing for power, and uses only about 5 cents worth of grease per year. I have had the mill in operation about 10 months.

I. P. ROBINSON.

Central Tennessee Convention

The Central Tennessee Bee-Keepers' Association will meet in the rooms of the Board of Trade, at Nashville, Tenn., on Saturday, April 25, at 10 a. m. This being the regular annual meeting for the election of officers, etc., a full attendance of the members is desired.

An interesting program has been arranged, including essays and discussions on subjects that will be of interest to all bee-keepers.

J. M. BUCHANAN, Sec.
Franklin, Tenn.



Conducted by J. L. BYER, Mount Joy, Ont.

Brood-Rearing in Winter.

It seems to be a generally accepted view, that bees wintering outdoors do little if any brood-rearing during the winter months. So good an authority as O. O. Poppleton, in comparing bee-keeping conditions of the North and South, says in the March American Bee-Keeper:

"In Iowa, and I suppose over the North generally, bees often cease all brood-rearing in October—almost always in November, and do not commence again till late in March. During nearly all this time they do very little outdoor work, and are not dying off rapidly as they would if active."

As regards cellar-wintered bees, Mr. Poppleton's statement could be, in many cases, correct, but the last clause of the quotation clearly shows that he has bees outdoors in mind, and with all due regards for the opinions of others, the writer desires to take issue with the common idea that bees in that condition do not rear any brood.

Three years ago, I helped to destroy 2 strong colonies in the last week of December. The owner had noticed a few cells of foul brood in each of these colonies when preparing the bees for winter, and not wishing to take any trouble with them, he decided to leave them till cold weather, destroy the bees

and melt up the combs into wax. In both colonies we found brood in 3 combs, in all stages from the egg to hatching bees, showing conclusively that brood-rearing had been going on as early (or late) as Dec. 9.

About the 15th of February, of the present cold winter, a farmer 3 miles from us cut down a large basswood tree, and found that there was a colony of bees in the tree some 40 feet from the ground. He sent word to a bee-keeper,—Mr. D. Ramer, of Cedar Grove, Ont.—to come and get the bees. Just for the novelty of the thing, Mr. Ramer fitted up a hive with some combs of honey, and cold as it was, scooped up the bees from among the crushed combs, and took them home with him. Whether they will survive the winter or not, is not for me to say.

Meeting Mr. Ramer a few days after he had the bees, I inquired as to the condition of the tree, and amount of brood and honey the bees had. He said that there was sufficient honey to have wintered them; and as for brood, it was there in all stages, from eggs to lots of hatching bees. As a low estimate he would say that there was brood to at least the equivalent of 12 inches square. The tree at the part where the bees had their stores, was a shell of about 4 inches sound wood, with about

the same thickness of rotten wood inside of that. Readers will bear in mind the extreme conditions these bees were subjected to. Forty feet from the ground, no flight from November till time the tree was cut, and on at least three different cold spells, the temperature had been 25 degrees below zero.

In every case I have heard of, where through accident or otherwise, a colony has had the brood-nest exposed to view during any of the winter months, every time brood has been present, and I firmly believe that the colony with *no brood* during these months, is the exception rather than the rule. This, of course, refers to ordinary colonies of bees—quite weak colonies we would reasonably assume would be unable to care for much brood in cold weather. But as we have had no experience to prove the matter, for aught I know, even very weak colonies may have *some* brood.

Caucasian Bees and Punic.

In the same issue of the American Bee-Keeper already referred to, appears a good photograph, of *our own* J. B. Hall—a man whose opinions are second to none in America, as regards sound judgment in things apicultural. His estimate of the Caucasian bees has been well known to the most of us for some years, and it now seems that Mr. Hall has been testing the Punic—a race much lauded by a few in "Merrie England." Their qualities as found by Mr. Hall are, in a nutshell, something like this—very gentle, great propolizers, rear both workers and drones right into October, thus using up all their stores; and they are great swarmers. They also excell in the matter of building queen-cells, Mr. Hall and his assistant having cut out of one colony, 179 perfect cells, to say nothing of many others just started.

Any one breeding Punic queens for sale, certainly would not have to dip any artificial cell-cups.

"Fall Dwindling" of Bees.

Morlep Pettit wrote me recently, and among other things he refers to what I have said relative to our bees going into winter quarters last fall with abnormally small clusters. He says that the same things were true in his apiaries, and makes a guess that the peculiar fall weather was accountable, causing a sort of "fall dwindling."

As a possible remedy he suggests that the storm-door as used on the Holtermann hive, be used with an entrance on *top* of the door instead of the bottom during the fall season, as this arrangement would keep out the wind and light. The device would serve that purpose all right, the only objectionable feature that I see being that it might discourage a flight on a suitable day in the late fall if the apiarist should not happen to be on hand.

Mr. Pettit also endorses my view on the question of sugar syrup, and incidentally remarks that his bees have all buckwheat stores this winter, and although they are in a perfect cellar yet quite a few show slight signs of dysent-

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ery. As regards the small clusters spoken of, we trust Mr. Pettit's experience will be in line with ours, as present conditions seem to indicate that the bees have been none the worse for smaller populations than usual, of which, more anon.

Errata.

On page 75, there is a little "mix-up" in that comment about the keeping qualities of honey-vinegar. As it reads, the statement referred too, makes it appear as though Mr. Dadant was the author of it, whereas C. W. Dayton, of California, is the "writer" referred too. Also, on page 75, 4th line from the top of the 3rd column, read "eulogistic terms" in place of "egotistic terms."

Co-operation Among Bee-Keepers.

At the last meeting of the Ontario Bee-Keepers' Association, considerable discussion took place on the subject of co-operation, and a committee was appointed to look into the matter and report at next annual meeting.

The "Farmer's Advocate"—one of the leading agricultural papers of Canada—has been inviting discussion along that line of thought, and in the March 5th issue, Mr. Chrysler, of Chatham, an enthusiastic "co-operationer", replies to some objections as seen by Mr. G. A. Deadman in a previous article.

Mr. Chrysler thinks the present system is liked by the buyers, and "the more names of producers they can obtain who have honey for sale, and deal with them in a private way, the better they like it."

The plan as outlined by Mr. Chrysler for the formation and working of a co-operative society is as follows:

"Form an association with sufficient capital to establish suitable quarters for storage, liquefying and putting honey in suitable packages for the retail trade. Make the shares of the company at \$25 each, and no person to have the privilege of owning more than 10 shares, or \$250. The company to have a president, vice-president, and a sufficient number of directors; a manager, and one or more salesmen, to be employed by the directors, and to be paid a certain percentage of the business done as a salary, to be under bonds, and to be responsible to the directors for all moneys and collections connected with their duties. The proceeds after all expenses are paid, to be divided among the members, according to amount and grade of honey contributed. To facilitate matters in raising the necessary capital, bee-keepers may give their notes for the amount of stock they wish to subscribe, and the amount deducted from the net proceeds of their honey. These notes the Association can use at the bank, which will advance the necessary capital. More than one place for so collecting the honey may become necessary, as the membership and conveniences demand. It would become possible to pay in cash a certain portion of the value of any bee-keeper's honey, any time after delivery."

Personally, I believe the principle of co-operation is sound and just, but notwithstanding the fact that a few years ago, the writer was quite enthusiastic

over the matter, at present I frankly admit that as things are just now, I do not believe the bee-keeping fraternity

are ready to give the united support so necessary to insure the success of the plan as outlined by Mr. Chrysler.



Making of Honey-Vinegar

BY C. P. DADANT.

I have lately received two enquiries concerning honey-vinegar, the first one from a bee-keeper of New York State who asks why his honey-water did not turn to vinegar, the other from the editor of the Bee-Keeper's Review, who asks me what I know about the keeping qualities of honey-vinegar. I must acknowledge that this last question has never been raised in my mind, and it caused me to make investigations, of which I will give the substance.

First, about the making of honey-vinegar. What is there to hinder honey-water from changing to vinegar?

I have stated several times in previous articles that the change from saccharine matter into acetic acid must necessarily pass through the alcoholic form first. But an alcoholic fermentation is not the only fermentation that may take place in honey-water or fruit-juices. A putrid fermentation, may under certain circumstances, develop in honey-water as well as in fruits, if the alcoholic fermentation is delayed or prevented. Have you ever heard it said, by some old farmer, that rotten apples made good cider? There are indeed people who truly believe that such is the case. Yet, neither rotten apples, decayed grapes, nor fetid honey-water can even develop an alcoholic fermentation. In the making of high grades of wine in old Europe, the damaged or decayed grapes are carefully removed.

To make alcohol which will be later changed to vinegar, it takes saccharine matter. The scientists tell us that the sugar of fruits is entirely destroyed by putrid fermentation. We hardly need to be told this, for every one knows who has tasted spoiled fruit, that instead of a sweet flavor, nothing but bitterness remains. Even although apples and grapes contain the germs that cause alcoholic fermentation, these fruits will only rot, unless placed in conditions which help develop the proper germs. A pile of apples under a tree will rot, the same number of fruits crushed and placed in a receptacle which will keep warmth and exclude the air sufficiently will develop alcoholic fermentation which will almost immediately afterwards become acetic if the air is not entirely excluded. Honey-water, diluted so that the sweet it contains is sufficient to preserve it, and kept in a cool place, may develop a certain amount of putrid fermentation.

We are told that all sorts of germs are

brought into the hive with the honey gathered in the flowers. So honey, unripe or diluted, is subject to all sorts of possibilities. That is why many people heat it before trying to use it either for mead or vinegar. This heating destroys all germs of fermentation, and to secure the alcoholic ferment, it is then necessary to add some yeast. But it is also necessary to keep the liquid at a temperature sufficiently high to permit the development of the germs of fermentation, and not high enough to kill those germs.

It is generally admitted that a heat of 70 to 90 degrees is necessary to keep up fermentation, and that a heat of 130 and upwards will destroy the germs, although some bacteria live at a much higher temperature.

When the alcoholic fermentation is well under way, the acetic fermentation may begin at any time, but it takes a much greater quantity of air for the latter than for the former. The alcoholic fermentation develops a large amount of carbonic acid, which for the time being will prevent all other fermentation. The deadly gas escaping from a vat of fermenting grape-juice, which will extinguish a candle brought near the surface—will exclude acetic fermentation until this gas has escaped. But the vineyardist knows well that if he does not exclude the air, there soon comes a vinegar odor from his fermenting vats, unless the amount of sugar is so great that either it or the alcohol formed in large amount will preclude the development of the acetic germ. So the very thing the wine-maker avoids is what the vinegar-maker needs. While the one hastens to bung up his barrels, keeping them well filled with as little air space as possible, the vinegar-maker devises the most feasible ways to expose the fermented liquid to the oxydizing action of the air.

Four things are therefore necessary in making vinegar:

1. A sufficient quantity of honey to permit of alcoholic fermentation. This fermentation is usually speedy, requiring but a very few days.

2. A sufficient amount of water. If there is too much saccharine matter, there will be but a very slow fermentation. From one to one and a half pounds of honey to the gallon is the most approved quantity.

3. A favorable temperature, from 70 to 90 degrees, Fahrenheit. The lower temperature gives a slow change, the higher a speedy one.

4. Air and ferment. The quantity of air needed for the first or alcoholic fer-

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mentation is limited, but some air is necessary as well as an escape for the gas which forms, during the chemical change which ensues. For the acetic fermentation, the more air the better, if the temperature is preserved.

Yeast, fruits or fruit-juices will furnish plenty of germs for both the alcoholic and the acetic fermentation. For the latter, if it should be slow to come, a little good vinegar or vinegar-mother will supply it. Fruit-juices, wine or cider, contain so much of the germs that a barrel of wine or cider left unchanged will be almost certain to turn to vinegar in a few weeks, if placed in a warm cellar. The only reason why so many people fail in securing the acetic fermentation for their honey-vinegar is that they do not give it enough opportunity to develop the alcoholic fermentation first, and most honey-vinegar will be found still sweet when already partly made. Pure alcohol mixed with water cannot make vinegar unless it contains some of the albuminous substances of vegetable juices on which the fermenting germs will feed.

There are cases where the alcoholic fermentation is induced, but no acetic fermentation can take place. It is when the liquid has been made very rich and has fermented until it contains 14 to 16 percent of alcohol and still retains some unfermented sweet. The quantity of alcohol mentioned is sufficient to arrest further fermentation. The alcohol dominates. We then have a liquid which much resembles Port or Madeira or rich California wines. This happens when three or more pounds of honey have been used. To make vinegar out of this requires thinning with water and adding acetic ferment, for such germs as may have existed in the liquid have been destroyed by the large quantity of alcohol produced.

After the alcoholic fermentation has taken place, it is not necessary that the temperature be kept constantly at the proper degree, in order to make good vinegar. But it must be remembered that in such case the changes will be delayed, and if the temperature is allowed to go below the freezing point, it is quite likely that more ferment will be needed in order to re-establish favorable conditions. The swiftest action may be secured by the slow trickling of the fermenting vinegar through the air. In some good vinegar-rooms of Europe, beech shavings, soaked in good vinegar, are used through which the forming vinegar is allowed to trickle, in contact with the oxygen of the air, and it is said that very strong vinegar is thus made in 48 hours, if the proper conditions are present.

A very limited quantity of honey in water, less than a pound to the gallon; a temperature too low, say 65 or less; the absence of ferment—any or all of these conditions will prevent fermentation and the production of vinegar. In such conditions putrid fermentation of different kinds take place. Your honey-water will find itself in the position of apples allowed to rot, instead of going through the alcoholic and acetic changes which take place in normal conditions.

In my next I will consider the keeping qualities of honey-vinegar.

Hamilton, Ill.

Putting Comb Foundation in Frames, Etc.

BY DR. G. BOHRER.

On page 77, G. M. Doolittle uses the following language: "Do not be side-tracked by the one who tells you to wait about putting this foundation into the frames till just before the harvest." Such talk, he says, is all a myth. Please permit me to state that, to my certain knowledge, foundation put in frames any considerable length of time before it is given to the bees for their immediate use, will buckle, thus putting its surface in an uneven and wavy shape. To my mind it should be given to the bees with the surface as nearly perfectly true as possible. For I can not see how the bees are to draw out the cells equal in depth unless they finish up the comb with a wavy surface which is most certainly not desirable in comb where brood is to be reared.

As to the matter of putting foundation in sections for a time before giving it to the bees, I can see no objection, as it is not intended that brood should be reared in sections. I will say, however, that in cases where 1½-inch starters are put in frames to be used in the brood-nest, no harm is, I think, likely to result from putting them into the frames for an indefinite period before given to the bees. But as many use full sheets of foundation in frames for the brood-nest in order to secure both straight combs and the absence of drone-cells, the fact that full sheets will buckle if put in the frames long before they are used by the bees should not be lost sight of; and in the matter of having all supplies at hand and in perfect readiness for use when the time for their use comes, I agree fully with Mr. Doolittle.

MORE ABOUT A PLURALITY OF QUEENS IN ONE COLONY.

Permit me to supplement Mr. Dadant's statements, on pages 14 and 15, concerning 2 or more queens living on terms of perfect peace in one colony, permanently. I will, however, digress a little by stating that I made the discovery that 2 queens do sometimes occupy the same brood-nest temporarily. And I was somewhat surprised, as I had never heard nor read of any such occurrences. Mr. Langstroth, in "The Hive and Honey-Bee," among others, made the impression upon my mind that by nature there existed a dislike, and an incompatibility amounting to an uncompromising hatred, between queen-bees. I had not, prior to the last 2 years, noticed that in each of two cases the one was the mother of the other. Last summer I opened a 2-story, 8-frame Langstroth hive, and found a beautiful young queen busily engaged in laying eggs. I suspected that it was about time for this colony to supersede its queen, as she was 2 years old. In fact, this suspicion was what led me to open the hive for the purpose of inspection. I lifted off the upper story and soon found the old queen also laying eggs, or at any rate I found many fresh eggs. This discovery was made during the flow of alfalfa honey. The two cases referred to led me to suspect that, as a

general rule, 2 queens in one hive living peaceably together, meant mother and daughter, and the mother about to quit the stage of action.

While the height of a free flow of honey does not in any way put a colony in an abnormal condition, it does in a sense cause them to become oblivious of some things that often occur about them, the entire attention of the field-forces being directed almost entirely, if not entirely, to the one grand object of collecting honey from the sources to which nature has directed them for their subsistence. At such times a hive may be opened and left open for an indefinite length of time, without being attacked by robber-bees. Aside from this, persons may pass through the apiary without being molested by any of the bees, and the bee-keeper will, as a rule, be able to handle the bees without veil, gloves, or smoke.

Hence, as Mr. Dadant states, young bees or queens may be safely introduced. But for a plurality of queens to inhabit the same brood-chamber permanently is out of line with the natural laws governing honey-bees. And I will hazard the prediction that when two or more queens live on terms of perfect peace in the same colony, we will be able to shear a hog and secure a fine grade of wool; Dr. Miller's hair will become as kinky as that of an African, Mr. Whitney's will turn jet black, while my own will return to its original sandy or red color, and Mr. Dadant will discard his big hive with deep frames, the Langstroth standard frame will become a thing of the past, and all will agree that the shallowest frames, now urged by a few, are if anything rather too deep. But aside from this, they will be regarded as the stuff for all bee-keepers to use. And aside from this, thin, trashy bottom-boards will be regarded as very much preferable to the solid bottom made out of lumber about one inch thick. But to be candid, I can see little if any advantage in more than one queen in one colony. During early spring, one queen, if a good one, will lay all the eggs that her colony can keep warm and develop into mature bees.

A MISTAKE HISTORICAL CORRECTED.

On page 32 of the Annual Report of the National Bee-Keepers' Association, Mr. Hilton, in his address in response to the address of welcome at Harrisburg, Pa., states that Mr. Quinby was the honorary president of the North American Bee-Keepers' Convention, which is a mistake. The convention in question was held at Indianapolis, Ind. Mr. Quinby was not there. Mr. A. F. Moon, of Paw Paw, Mich., was its president. A few weeks later, what was known as the American Bee-Keepers' Convention was held at Cincinnati, Ohio. Mr. H. A. King, of American bee-hive fame, served as its president. Many of the members of the North American Bee-Keepers' Convention were in attendance. By agreement, the members of the two conventions arranged to meet in Cleveland, Ohio, about one year later, where the two conventions were united, thereby organizing what is now known as the National Bee-Keepers' Association. Mr. Quinby acted as President, while the two bodies adopted articles

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of agreement which made them one.

Mr. Langstroth was at the Cincinnati convention, but was not at any time in the chair as presiding officer. He, however, did participate in the discussion of some of the questions that came before the convention. This was soon after the demise of his son, James T. Langstroth, on account of which he felt very much depressed. This was the last time I met him personally. He was not at the Cleveland convention. And I never met Mr. Quinby after the Cleveland convention. I do not now remember who was chosen as president for the following year, but it seems to me that Mr. Quinby was the man. The next annual convention was held at Indianapolis, Ind., and Rev. W. F. Clarke, of Guelph, Ont., presided in the absence of the president.

Lyons, Kans.

Apiarian Rights of Priority

BY DR. C. C. MILLER.

N. P. Anderson, page 81, expresses the kindly hope that I may not lose my location, yet this hind end of his article is hardly in keeping with the front end which leans in the direction of making me feel I have no solid claim to an abiding place.

Mr. Anderson, let's sit down and talk over some of your points in a friendly manner.

"Why should a bee-keeper enjoy special privileges not extended to other people?" Please tell me why a bee-keeper should be denied privileges extended to the cattle-raiser, wheat-raiser, and in fact to every other who, like the bee-keeper, depends upon having a certain portion of the soil from which to obtain his support. Don't you see that the bee-keeper is on a parallel with these men, and not with the merchant?

That "competition." Yes, the up-to-date bee-keeper coming in may—possibly—drive out "the farmer with his 25 or 50 boxes of bees (some of them rotten with foul brood, etc.);" but there's another side to that story. Suppose that same farmer comes in, foul brood and all, and sits down beside the up-to-date bee-keeper. Do you suppose Mr. Up-to-date would thrive on that sort of "competition"?

"The right of priority as we have it at present, is all the protection any up-to-date bee-keeper needs." Then you do hold that priority gives a man a "right." Thanks, for agreeing that I have any kind of a right to my location. The farmer who pays good money for 160 acres of land has a right to that land, but what good is that to him if there is no law to prevent a stronger man from coming along and taking away his right? Now, seeing you agree that I have a right to my location, would you not be obliging enough to allow me a law to protect me in that right?

As a matter a little aside from the main question, you touch upon a point of intense interest to me. You say an up-to-date bee-keeper "will keep at all times all the bees his locality will support." Now he couldn't do that unless he would *know* just how many; and you wouldn't make such a statement unless

you were positive about his obtaining that knowledge. I'm so anxious to obtain the knowledge that you possess, that I'm willing to be humble enough to expose my abject ignorance, and confess to you that I don't anywhere nearly know just how many bees my locality will support, although I've been trying all these years to find out. I'm sure others will be glad to learn. Please do me the very great favor to send to the American Bee Journal full instructions how to proceed to find out. I shall watch with the greatest interest to see the article. And while you are about it, would you mind telling us just how many bees you keep all the time? For then, you being an up-to-date bee-keeper, we would know just how many bees your locality will support.

Allow me to say that if you are depending entirely on bees for your bread and butter, of if you ever get into that position, and some one locates close beside you with a few colonies rotten with foul brood—well, I promise you my hearty sympathy.

Marengo, Ill.

Caring for Empty Combs and Ridding Them of Moth-Larvae

BY G. C. GREINER.

From the occasional inquiry how best to protect combs and sections against the ravages of the wax-miller and its progeny, it would seem that more or less trouble is encountered by not a few of the bee-keeping fraternity. In offering the following hints on this subject, I do not claim that my ways are better than anybody else's, but the fact that I have had no occasion to sulphur or fumigate combs of any kind, or sections either, for 10 years or more, is sufficient guarantee that there must be a little something in management. My success in having so little trouble, while others are annoyed, is due mainly to the persistent and untiring application of the old saying, "An ounce of prevention is better than one pound of cure."

When spring opens, we often have quite a number of depopulated hives on hand, which contain sets of desirable brood-combs too valuable to be wasted or destroyed by the wax-larvæ. As soon as we discover the demise of a colony, the first step should be to clean the hive, sweeping off combs and removing all filth and rubbish. At the same time one of the combs should be taken out and the rest spaced at equal distances to take up the vacancy. Larvæ are not very apt to work in spread combs.

Then the hive-entrances should be enlarged to the full width of the hive, and if the hive has both a flat and a telescope cover, the former should be removed. This gives the combs air, and in some degree light—both being distasteful to the comb-destroyers—and at the same time allows the bees free access to the inside of the hive, where they act as a sort of police force in protecting the combs.

With the advancing season, when Na-

ture attracts and draws the bees to the field, spiders generally find these hives to be desirable hunting-grounds. They spin their webs at or near the entrances, which is the best protection of our combs Nature provides.

It is with many persons a perfect mania to kill everything in the line of insects and other useful creatures of the lower animal life — snakes for instance — but I never kill a spider knowingly. They are, to use a common phrase, the best friend a bee-keeper has. If they become a nuisance in one place or another, as they do occasionally in the honey-house, I drive them away by sweeping down their webs.

Combs prepared as above stated, are comparatively safe from the inroads of the wax-miller. I have kept them in this way many times all summer without serious trouble. But our vigilance must not cease here, we have to keep our eyes on them all the time, and make regular examinations say once a week. This may seem like a tedious job, but it is not, although it is a persistent one. It is so easily and quickly done, that hundreds can be examined in a few minutes. All we have to do is to lift one end of the cover, and one glance will tell whether our interference is needed. If no webs are spun between the combs, the cover may at once be replaced, and the combs considered safe. But if they are connected by those fine, silky threads, immediate action must be taken, for we may be sure that moth-larvæ are destroying our combs.

Fortunately, this does not happen very often, but when it does, the next question is, How to rid the combs of these pests?

In former years I have spent quite a little time picking out worms with a nail, sharpened stick, piece of wire, or whatever came handy, the same as I read not long ago that some of our bee-keeping brothers advised doing. This is all right for the want of anything better, but late years I have used an automatic worm-destroyer in the shape of a flock of Plymouth Rock chickens, that beat hand-picking all out of existence. Whenever I have an infested comb, I simply lay it flat on the closely mowed lawn near the honey-house, and before I have time to straighten up, half a dozen or more of my chickens are pulling Mr. Larva out of the comb, and consider it a great treat.

By the time the one side is cleaned out, and that is done in a hurry, the larvæ that were not in sight are frightened by the disturbance and try to escape on the underside, and when the comb is turned bottomside up, almost all the larvæ, that are not on the ground, are on the outside of the comb, and are in the chickens' stomachs before they know what has happened.

And how are chickens taught to perform this part of bee-keeping? The easiest and simplest thing in the world. As the season advances, and the time draws near when their service may be required, I sprinkle a handful of wheat on the ground where I wish to operate, and call them. The first time they may be a little slow in making their appearance, but a few will see what is

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wanted, begin to pick up and induce others to do likewise. The second time they come at the first call, and the third time they are waiting for me. This is about all the training they need, except that I sprinkle a little wheat on the first comb I offer them for investigation. Trying to pick the wheat from the bottom of cells, they run across some of the worms and after the first taste, no farther education is necessary. Every larva, large or small, is doomed to certain annihilation.

It is a great mistake, made by many, to take off honey in the evening and set the supers against the hives to give the bees a chance to go back to their hives. This is the most prolific source to stock up our sections with larvæ. Sections of honey should never be exposed in the evening or after dark, where those tiny little millers, (and large ones, too) can have access to them. They are just as liable to visit the supers in our shops and honey-houses as out-doors, and to guard against all possible trouble, sections should be kept covered as nearly air tight as possible, wherever they are stored. I remember, many years ago, a bee-keeping friend, at whose place we called, had a fine lot of white clover sections, as he supposed, which he offered us for sale. On examination we found the whole lot, consisting of several stacks of supers, 8 or 10 high, all matted together and alive with worms of all sizes. He had followed the above plan and was not aware of the resulting consequence until too late, for his honey was completely ruined.

In keeping my extracting combs so free from all attacks, I can hardly see where my ounce of prevention comes in. I use no extra precaution, except that I keep them covered up just before and after dark. When my last extracting is done, which is not later than about Sept. 1, in this locality, I set all combs outdoors, near the beeyard, to let the bees clean them out. They remain here in stacks generally for several weeks, until I begin to prepare things for winter, when they are stored in the honey-house. During the first few days, while the bees are to work at them, I keep them uncovered in the daytime, but toward sundown they are all covered up. When they are moved in the honey-house, they are again snugly stacked and covered up, and that is the last I see of them until wanted the next season. With this treatment I have not had a larva in them for 10 years or more.

Outside of the combs spoken of, I aim to keep on hand a few dozen sets of combs as a reserve in case of need. They are generally a miscellaneous lot, consisting of brood-combs, extracting-combs, drone-combs, perhaps some frames of foundation, etc. I keep these on open shelves, made of 2-inch slats at one end of the honey-house. Being exposed to the light and always spaced, or aimed to be, at proper distances, they are never molested, unless some of them get accidentally moved close together. Of course, I serve these combs the same as I do those out-doors, glance over them occasionally. If no webs are in sight, no trouble need be anticipated.

Getting Ready for Surplus

BY G. M. DOOLITTLE.

A correspondent wishes me to tell the readers of the American Bee Journal how I get the bees ready for the surplus honey harvest, and also how I fix my supers of sections, and when they should be put on the hives, all of which is something that every bee-keeper should know about, if success is to be obtained in apiculture.

The only thing which is likely to baffle our efforts, is the getting of the bees in readiness for the harvest, if that harvest is to come from white clover, for this plant blooms so early in the season that it is often hard work for the bees to be gotten in readiness to secure the best results from the bloom. Some of our best bee-keepers advocate feeding the bees a little every day to bring them up to "storing condition" in time for the white clover; a few even going so far as to recommend extracting all the honey from the combs and then feeding it back again, after it is diluted with water, seeming to believe that a gain in brood can be obtained in this way sufficient to pay for all the extra work this makes.

Now, during the 40 years of my bee-keeping life, I have tried all of these, various ways of feeding, and for a few years I thought it was just the thing to do, but after a trial for several years of feeding a part of the colonies and leaving others without feeding, but allowing them enough honey in their combs so that they would feel rich in stores all the time—rich beyond feeling any need of scrimping—I have found that the latter come out equally well with those fed every day (some years even better), with all the work and fussing and feeders, required for the feeding, done away with.

It is no small job to feed 100 colonies of bees for 6 weeks, no matter how handy we may have things, nor how expeditious we are able to work. It is far easier to set combs of honey aside during the honey harvest of the year before, and then give these to the bees, as they need, all at one time in the spring, than it is to be feeding every day for the necessary time required to bring the bees up in good condition for the harvest, for, after once beginning to feed, it is necessary to keep it up till the flow commences, otherwise we lose very much of what we have gained by starting feeding.

My plan is to know, just as soon as possible after spring opens, that all colonies have stores enough to last them till the willows and hard maples bloom, at which time they generally obtain enough honey to supply their wants for a week or so, at the end of which, they are given enough stores to last them through till clover blooms, giving this last by way of an extra story placed over the brood-chamber, with a queen-excluder between. This not only insures them plenty of stores, but provides room for the storing of any surplus which may perchance come from fruit bloom, and also gets the bees in the habit of entering the upper story or super so that when the super of sections is put on they will enter them

without hesitation, and at the same time keeps them from contracting the swarming fever, which they are often liable to do, where they are allowed only the brood-chamber of the hive up to the time the sections are put on.

As to when the supers of sections should be put on the hive, I have experimented very largely along this line, and I now wait till the clover bloom opens; and not only this, but till I know that the bees are securing a little more than a living from it; for it is useless to put on the sections until there is something coming from the fields to be stored in them; yes, often much worse than useless, for if the bees have nothing to do, they will often tear or gnaw the foundation starters which you have put in the sections, till they fall down or are past being of the good service for which they are intended.

With me, it is very easy telling on any pleasant day, by walking amongst the hives, whether the bees are bringing in little or much nectar; but to the one who cannot thus tell, it is best to open the hives of some colony, and as soon as you see new honey sparkling along the tops of the combs, it is time for the sections. And, if you are an enterprising apiarist, you will have had the supers of sections all in readiness for the bees long before this, so that when this first new honey is coming in you can hustle the supers all on in one day.

Let me urge on every one, not to wait about this preparation of the supers till they know for certain that a harvest is to be obtained, for, if this is so, the best part of the harvest will often be past before the supers are gotten on the last hives. Always have the "dish right side up to catch the honey," is a proverb every apiarist should paste in his or her hat. A few days' neglect of this will often turn what might be a splendid success into an almost entire failure.

So far, everything that has been done is perfectly applicable to the production of either extracted or section honey; but believing that there is more profit in comb honey in sections than there is in extracted honey, I will tell how I fix my supers of sections.

My sections are all made and gotten ready during the winter. After making, each section is either filled with extra-thin section foundation, has a starter of this foundation put in it, or else a starter of nice white comb attached to the top of it. No one should try to produce section honey without putting a starter of some kind in the top of each section to guide the bees so that the combs will be built straight. If comb is used, this should be cut in pieces of a triangular shape, each of the three sides being from 1½ to 2 inches long.

As quite a few bee-keepers think it pays to insert thin foundation, fastened in frames, in hives 24 to 48 hours for the bees to draw out the cells into comb before using the foundation for starters, they claiming that by so doing the bees are gotten to work immediately in the sections, I will tell how I fasten these starters of comb in the sections:

Procure a piece of band-iron about 2¼ to 2½ inches wide, heating the same

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in the stove, or over a blue-flame oil heater, when it is to be lightly laid on the under side of the top-bar of the section (the section should now be bottom side up,) when with the other hand take one of the triangular pieces of comb, touch it to the iron, when the iron is quickly withdrawn, and the piece of comb immediately set firmly on the section. Now turn the section over and put it in the super, when you will have a nice and enticing guide or starter for the bees to commence work upon, which will not fall or pull off. There is no question but that the bees will take to such a starter much more readily than they will to one of foundation, but whether it will pay to put the foundation in colonies to have it drawn out into comb, and do all the extra work required so that we may have starters of comb instead of foundation, is something that I am not just yet free to decide upon. However, I do think it pays to save all pieces of clean white comb we may chance to find built where we do not wish it, and use these for cutting up in this way. If you prefer to use comb foundation instead of this comb, let the starter be a triangle, having the length of sides 3 to 4 inches.

Very many of our best apiarists prefer to fill the section completely with foundation, except a quarter of an inch or so at the bottom. Where comb founda-

tion is used, be sure to use only the very thinnest, which should measure not less than 10 square feet to the pound. If thicker than this, the bees will not always properly thin it, and in that case your customers are quite likely to complain of the surplus wax in the comb.

Foundation is best put on with a foundation fastener, many of which can be had of any dealer in bee-keepers' supplies; but if you do not have one of these fasteners, very fair work can be done with the band iron of about the width of the sections.

Having the starters all in the sections, they are now to be arranged in the supers. If possible, the center tier of sections in the super should consist of those which were filled partly or quite full of comb, left over from the season before. If you have these, the bees will go into the sections and be at work much sooner than when such are not used.

A good many bee-keepers complain of having too many partly-filled sections in the fall, but, as a rule, I do not have as many as I wish, for I consider them a good investment as above; in fact, better than money in the bank. Having the center tier of such partly-filled sections, place on either side those with starters, till you have the super filled, when you are ready to put them on the hives at any time the bees are ready.

Borodino, N. Y.

manure that was not 5 feet from where he was investigating the little green flies on the cauliflowers. When he pulled himself out of the muck Mike triumphantly exclaimed, "Ye dirty spalpeen, I guess it is yerself that is afther having foul brood and not the bays, for sure ye are the foulest looking sight I have been afther seeing in all me born days."

And the professor admitted he was pretty foul, and it was the manure that was malvoilent and not the bees. With that Mike apologized for calling the savant a "dirty spalpeen."

Scrapings and Cappings Mean Money.

Too often the bee-man loses sight of the small things. I have seen him neglect the cappings until they were all destroyed and unfit to render into wax. So, also, he scrapes the hives and frames and lets the wax fall upon the ground to be lost. It pays to go through the hives during the late winter months and remove all unnecessary bits of comb from frames and the sides of the hive. Even where the bees have built the combs so that they are unnecessarily thick, it is a good plan to shave them down to a fair thickness. You might as well get the wax; it is often placed in the hive by the bees in unwanton liberality.

The Eucalyptus Again.

In years gone by I have from time to time referred to this tree as a honey-secreter and its great worth to our bee-keepers. Throughout California two or three varieties are quite common, especially *E. globulus*, or blue-gum, as it is commonly called. I have just received this year's Seed Bulletin from the Agricultural Experiment Station of the University of California.

As supplementary to what I have already written on this tree, I am going to copy the portion of the bulletin bearing upon the Eucalyptus, in full. It is as follows:

The growing interest in Eucalyptus planting is now keener and wider than in any previous year since this important genus was introduced from Australia over 50 years ago. This interest is inciting commercial propagators and our nurseries are therefore offering large collections of well-grown trees at prices which encourage forest and wood-lot planting. Aside from species thus available we have several growing at the University Forestry Station at Santa Monica from which seed has been gathered for this distribution to those who desire to grow species which usually do not enter into large plantings, viz.:

1. *Eucalyptus Botryoides* ("Bastard mahogany").—An upright and spreading tree highly recommended by all the Australian writers, as one of their best timber trees, if it is grown where there is plenty of water. The first 14 months after the young grove was put on the Station Grounds at Santa Monica the average height was nearly 13 feet. It will stand a small amount of frost.

2. *Eucalyptus Citriodora* ("Lemon scented gum").—Very ornamental, having lavender and cream colored deciduous bark, the leaves are long and narrow, the branches are pendent, giving the trees a weeping effect. The wood is claimed by the Australians to be valuable for wagon work. The average growth of this species is about 5 feet a year for the first 12, then the average is somewhat smaller. The leaves when crushed give off an aroma, from which the species is named.

3. *Eucalyptus Cornuta* var. *Lehmani*.—This variety is a dwarf, having very small, thick, dark-green leaves. The buds are borne in large irregular masses and the deciduous calyx caps are 4 and 5 inches in length. The flowers are of a dark-green color and are in bloom during the late fall. The wood is a light-brown



By W. A. PRYAL, Aiden Station, Oakland, Calif.

A Promising Harvest This Year.

It is now the first of March and the rainfall has been all that could be desired in this portion of the State. I understand that the southern portion of the State has been fairly well treated in the same respect; the northern section of California seldom fails of getting a good wetting annually; this year it may run over the average. Of course, all kinds of agricultural crops will be good; what the fruit crop will be will depend upon whether there are heavy frosts during the first couple of weeks this month—the more tender kinds of fruit-blossoms may be nipped by cold weather. What the honey-crop will be will depend much upon the condition of the weather during the period the flowers that secrete nectar are in blossom. So the fruit-grower and the apiarist is never "out of the woods" until the crop is pretty well gathered.

Like Foul Brood.

Mike Murphy was quite a gardener; he had his "praties" and other "garden sass," all of which grew in greater luxuriance than was to be seen anywhere around. He had a few colonies of bees

which gave the family all the honey they desired. One day Prof. Buggman, of the entomological department of the university of the State he lived in (remember that this is not a story upon any of the bugologists hereabouts), came over to see if there were any cabbage-flies upon Mike's cauliflowers. The gardener took the professor to the patch, which was close to the bees. An inspection was at once begun, but all of a sudden, the latter exclaimed:

"Mr. Murphy, your bees have foul brood."

"Go 'way wid ye, ye don't know what yer talkin' about," indignantly retorted Mike.

"Sure, Mike, your bees have the disease, and that the worst I ever knew. It is right in that hive there."

And Mr. Murphy yanked off the cover of the colony indicated, and said, "Now we shall see if my pets are down wid the dhread malajy."

But the professor did not stop to investigate the colony, for a score of bees from the hive flew at him, evidently to resent the insult innocently aimed at them by the savant. In his haste to beat a retreat the good professor stumbled over a freshly dumped pile of muckish

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in color, very hard and easily polished. This variety is a curiosity, capable of forming a good shade-tree if properly trained.

4. *Eucalyptus Decipiens*.—Of a dwarf growth at Santa Monica Station, but it blooms profusely during the late fall and early winter; the bloom is worked by large numbers of bees.

5. *Eucalyptus Diversicolor* ("Karri gum").—One of the tallest growing trees in Australia, producing a very valuable wood for wagon-work. This tree will stand frosts nearly as well as some of the better known and harder species.

6. *Eucalyptus Eugenioides*.—This stringy bark produces a fairly durable timber and one that can be used in building, although it is of slow growth. Its range is not definitely known.

7. *Eucalyptus Gunnii* ("Tasmanian cedar gum").—One of the hardest gums in Australia. It attains a fair size in this country and has a fairly large range.

8. *Eucalyptus Leucosylon* ("Ironbark gum").—An upright and rather rapid grower and the timber is very hard and durable. The trees are found growing in the southern part of the State. The white flowers are in bloom during the winter.

9. *Eucalyptus Melliodora* ("Yellow box-tree").—Produces a wood valuable for wagon-work, etc. In contact with the soil it is very durable. This is one of the best bee-trees among the *Eucalyptus* and is in bloom all winter and early spring.

10. *Eucalyptus Piperita* ("White stringy bark").—An upright and much spreading growth. The wood is valuable for shingles and other building purposes, while the leaves are rich in volatile oil.

11. *Eucalyptus Punctata* ("Leather-jacket").—Produces a very hard, heavy and durable, dark brown wood. The flowers of this species are borne in great numbers during the fall months and are much sought by bees.

Eucalyptus seedlings are quite easily grown in boxes of light, sandy loam not disposed to bake or crack; cover the seed very lightly and then keep moist, but not wet, regulating the sunshine by a lath cover, or something of that sort, but do not exclude the air too much. Either sow very thinly, or sow thickly and then pick out seedling at greater distances in other boxes when they are about 2 inches high. Such little seedlings placed about two or three inches each way will grow in the boxes until about a foot high, and can then be put out in place, cutting with an old carving knife, so as to give each little tree a block of soil which the roots will hold together until set in its new place, or the roots may be dipped in soft mud to keep them from drying out. One soon gets the knack of growing these seedlings by experience, the main point being to have moisture enough and yet not too much, also to guard carefully against drying out while the seedling is very small.

Seed in small packets, 5c., postpaid, for each kind ordered.

much study of the pollen of different plants.

CARNIOLAN BEES.

The next paper was "A Season with the Carniolans." The author said his experience was limited with these bees, but that they had done so much better for him than his best Italians that he felt very partial to them. He had looked up their claims in apicultural literature, and corresponded with a number of experienced bee-keepers who keep this race as well as those who keep Italians. He gave a brief description of the drones, queens, and workers. He compared them with Italians chiefly. He maintained that they were better winterers, better breeders through the changing weather of the spring months, became strong for any early honey-flow, and were uniformly so. They did this during the very unfavorable spring of 1907. He could not find a single unfavorable report of Carniolans anywhere, while Italians in all Northern States wintered badly, and were slow in building up. He thought these qualities were fixed in this race for they have been bred for centuries in a country in most respects similar to our Northern States. He also found them gentler than Italians, that they capped their honey whiter, used but little propolis, and were almost free from disease in an exceedingly foul-broody locality.

The paper was followed by discussions and questions. One wanted to know why the honey was whiter in the comb, and it was explained that they do not fill the cells quite so full of honey, so that it did not touch the capping.

Some had tried the Carniolans, but objected to them because they swarmed so much, and wanted to know the management. Mr. Hann replied that they should be given all the room the queen will occupy in the way of empty comb up till the opening of the clover flow, and then shake all out on full sheets of foundation on the old stand, giving surplus room at once. Place the brood in weaker colonies or in nuclei, and treat that the same way in a week. Treated in this way they gave more comb honey than Italians, and did not swarm.

At 1:30 p. m. came a business session. The following officers were elected for the coming year: President, W. W. Case; Vice-Presidents, J. H. M. Cook, and Albert G. Hann; Secretary and Treasurer, Geo. N. Wanser, of Cranford. Mr. J. H. M. Cook was elected to represent the New Jersey Bee-Keepers' Association at the next meeting of the State Board of Agriculture, and to report on its condition.

FUTURE OF THE HONEY BUSINESS

The next was a talk on "The Future of the Honey-Business," by J. H. M. Cook. He began by telling how bees and honey had been known through all history, and how honey had been known through the same period as a delicious and luxurious article of food. Then he gleaned briefly over the investigations by naturalists beginning with Swammerdam in the natural history of the honey-bee and the economy of the hive. He referred to the practical handling of bees for honey, beginning with the greatest invention in all apiculture—the loose-



Report of the New Jersey Convention

The New Jersey Bee-Keepers' Association met in annual session at the State House, Trenton, N. J., Jan. 11, 1908, at 10:30 a. m., with Pres. W. W. Case in the chair. The Secretary, J. D. Wanser, being absent, J. H. M. Cook was chosen Secretary *pro tem*. The minutes of the last meeting were read by Secretary Cook, and approved. The election of officers was postponed until the afternoon session.

BEES AND BLOSSOMS.

The first paper was by Prof. Case on "Bees and Blossoms." This was a well-prepared, scientific paper. Some of the important things he brought out were that plants that require the aid of bees and other insects in their cross-pollination bear brilliant-colored blossoms; while those plants that do not require pollination by bees and other insects, do not bear brilliant-colored blossoms. Mr. Case is well versed in botany and drew many illustrations to prove his proposition, with much comment on each illustration. Among his illustrations of brilliant-colored blossoms to attract bees, apples, pears, cherry, peach, buckwheat, clovers, strawberries, pumpkins, squashes, melons; among colorless blossoms he named grasses of all kinds, grains except buckwheat, corn, etc. The paper further showed how beneficial to the fruit, berry, and melon grower is the bee-keeper, but of especial benefit to the apple, peach, and pear grower, to fertilize the early blooms of those trees, because other insects are not usually

bred in sufficient numbers so early in the season to pollinate properly such blossoms. Another important fact about bees as pollinators was that bees visit only one kind of bloom on each trip. This law of bee-life insures cross-pollination of the blossoms of each kind of plant. If bees visited promiscuously among all kinds of bloom, they would be much less valuable as pollinators, for blossoms are inert to pollen except from their own kind.

All these facts show how the fruit-grower should welcome the bee-keeper in his midst. Mr. Case also set forth the fact that bees never puncture fruit of any kind. Mr. Case made several colored drawings of different blossoms on an enlarged scale, to illustrate many of the facts brought out.

The paper was followed by approval, discussion, and questions. Some doubted that the bee visits only one kind of flower on a trip, but could give no evidence from direct observation. Another member said he had painted bees, and observed them much and carefully, and had always found it true. One member wanted to know how long each particular blossom was in condition to be pollinated. The reply was, "Only about 6 hours." This was thought to be a good point to show the necessity of having plenty of bees in the locality of the fruit-grower, for the weather is often very changeable during fruit-bloom. A member asked if the honeys from different plants might be detected by the presence of the pollen in it. The opinion prevailed that it might, but that it would require a high-power microscope, and

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hanging frame invented by the great Langstroth. He briefly reviewed the many improvements that had been made in bee-fixtures of all kinds during the last 50 years, and how the consumption of honey and its demand had increased. He said that people were being educated all the time to use more honey, and one means in particular as fostering this, he thought, was the popularization of the bee as a means of nature study.

He said, "We know of no way to judge the future but by the past," and inferred that honey would continue to be in growing demand in the future as an article of food. He thought it would hardly be considered a necessity like bread or potatoes, but always a luxury; but even this fact was for the good of the business. He said that there was not so much cutting of prices in luxuries as in necessities, and that people were more willing to pay a good price for luxuries than necessities. All thought it was a good talk.

WINTERING AND FEEDING BEES.

The next was a general discussion by all present, on the wintering problem. One member had recently bought a number of colonies with but little honey in the hive, and he wanted to know how to winter bees with no honey in the hive. Another member answered quickly, "Put them in cold storage."

The next question was how to feed bees in winter when necessary. Some seemed to think "Good" candy all right, but that it was an awful job to make if much feeding was to be done. Another had tried it and said it generally melted more or less and daubed up the bees and hives, and often ran down among the bees, killing the colonies. Another member advised using no honey at all in sugar, but put just enough water in it to get it into a cake nicely, and put the cakes where they will dry thoroughly, and then put on top of the frames, cover nicely, and that was all.

A German member said he had had considerable experience with this method, and always with perfect results. He put enough loaf sugar in each colony that needed feeding, covered it up, and that was all there was to it. He said the moisture from the colony was sufficient to liquefy it as fast as needed, and that bees thus treated wintered perfectly. All agreed it was new, but that it was the easiest of all methods, and thought they would try it.

At 4 p. m. an adjournment was taken till the next meeting, which would be called by the Executive Committee. All felt much profited and instructed.

ALBERT G. HANN.

Report of the Chicago-Northwestern Bee-Keepers' Convention.

(Continued from page 83.)

HIVE-LIFTING DEVICES.

"Would a hive-lifting device be of use in the apiary?"

There were 3 affirmative answers, and 12 negative.

WINTERING NUCLEI IN CELLAR.

"How would you winter a nucleus of bees if the cellar were too damp?"

Mr. Wilcox—Make it dry enough.

Mr. Taylor—Make a queen-excluding honey-board and set it on top of a strong colony.

HONEY-HOUSE FOR 50 COLONIES.

"What size honey-house is necessary for 50 colonies running for comb honey, there being no other buildings to store things in?"

Mr. Taylor—If he wants to store empty frames, etc., and room to prepare honey for market; and if he wants it for honey only, are two different things. About 15 feet square is large enough for honey.

Mr. Wilcox—16x24x12 feet high for storing empty frames, etc., and preparing honey for market. 12x16x7 feet high, if for honey only.

"What would it cost to build?"

Mr. Wilcox—\$250.

"Has anybody had experience with tar paper over a frame house?"

Mr. Dadant—I had experience with a sort of felt, and very soon replaced it with metal. We used corrugated iron for cheap roofing. It is fire-proof, clean, and does not rust readily. I have had some for 7 or 8 years. It costs less than shingles.

Dr. Miller—My shop is covered with a sort of felt. I believe it is good. I would put on this roofing instead of shingles.

Mr. Kimmey—I have had experience with prepared roofing and corrugated iron. I put up a building 48x50x24 feet. I put on corrugated iron a year ago last March. Last January it was all rusted out, and I had to put new roofing on. There are different kinds of both. Some stand well and some don't. It depends upon the quality. As to felt roofing I suppose he means any roofing material. I have a building 48x16 feet.

I put on roofing paper 8 years ago, and it is just as good now as it was then. There are different kinds on the market.

Mr. Fluegge—My plan was not to cover a part of the building with roofing, but to build the building itself with tar paper or felt roofing. Build the frame and then put it on in 4-inch strips. Cover this with wire-netting and then cover with roofing. What is the experience of bee-keepers on it? Is it worth having? It would be cheaper than lumber.

Mr. Holbrook—In South Dakota there are many, many tar-paper buildings. Tar-paper will affect the taste of honey.

Mr. Dadant—I have tried tar-paper. I put sand on it. I had it 3 years, then all of a sudden it leaked through, and it didn't take long for it to go. I have had corrugated iron since 1896. It is not near a smoke-stack with coal soot flying on it. The smoke of the coal rots it very fast. You, however, run no risk because you don't need to burn coal. Put the corrugated iron over the tar-paper. The first that I put on I galvanized all over. There was no change in it. I don't nail it much. I covered my barn with corrugated iron, putting in 3 nails at the upper end of the sheet and 3 or 4 at the bottom; put them on top of the corrugation, and don't set them in too deep. There is no danger of rusting, and no danger of fire.

Mr. Fluegge—Suppose the building were built of that for walls instead of wood, would it be dust-proof for a honey-house?

Mr. Dadant—There would be no dust if put up right.

The convention adjourned until 9:30 a. m. the next day.

(Continued next month)



Send Questions either to the office of the American Bee Journal, or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Changing Bees from Hive to Hive.

How often do you change a colony of bees from one hive to the other? SUBSCRIBER.

ANSWER.—Never, unless there be some special reason for it. A colony may be changed when it is desired to use some different hive, or when its hive is worn out; otherwise it should remain year after year in the same hive.

Wintering Bees in the Mountains.

Here in the Alleghany Mountains we have pretty cold weather some seasons. What would you recommend? I have no cellar, and could not make one very well. The double-walled chaff-hives are too expensive.

WEST VIRGINIA.

ANSWER.—First thing I'd do, I'd find out how others near by wintered successfully without cellars. But no farther north than West Virginia there ought to be no trouble in wintering in single-walled hives with some kind of protection about them, if it's nothing more than corn-stalks on all sides but the front. The old-

fashioned shed, with hay or straw packed over, between, and back of hives, ought to work pretty well.

Deep Hive-Cover—Comb and Extracted Honey from Same Super.

1. Do you think that the 11-inch hive-cover will pay for its extra cost over the ordinary flat cover?

2. What is your opinion of the flat cover, and using paper for spring protection? If the latter, which would you use—tar-felt (black), or white building paper? My latitude is 43½ north.

3. If I use extracting frames in place of outside row of sections with fence separators between them, will the bees blacken the cappings of the outside row of sections when the combs become old and black in the extracting frames? or, in other words, what do you think of the Townsend plan of comb and extracted honey in the same super? MICHIGAN.

ANSWERS.—1. I don't understand what you mean by an 11-inch cover, but if you mean a

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double cover with an air-space, I think it well worth the difference in cost. It is cooler in the hot sun, and warmer when it is cold.

2. Testimony is so conflicting that I have no fixed opinion. Of those who like such covering, some say black, some say light-colored.

3. Mr. Townsend uses only light combs in supers, and now uses only one frame at each side. If dark combs are in a super you may count on the sections being darkened. In the hands of Mr. Townsend the plan is a success. Whether others would do as well with it is doubtful.

Bottom-Board Depth—Iron Hive Covers.

1. What is the best depth of a bottom-board for out-door wintering of bees?

2. Would galvanized iron covers be so hot in summer as to drive the bees out of the super?

3. Would a super-cover or escape-board placed over frames with a 1/4-inch space between keep bees warm and dry in winter, or will dry packing be better?

ANSWERS.—1. My bottom-boards are 2 inches deep, and I wouldn't want them less for cellar or outdoors.

2. Yes, if nothing but the iron over them and out in the sun. A board, then a space, and then the iron, would be all right.

3. Likely the packing would be better.

Lumber for Hives—Foundation Fasteners—Buying Nuclei.

1. Is cottonwood lumber good for bee-hives? Is basswood good?

2. How much buckwheat do I have to sow to the acre? Is it better than clover?

3. Which is the best foundation fastener, the Daisy or the Dewey?

4. Which is the best way to buy bees and queens—in 4-frame nuclei with Langstroth frames, or from a queen-breeder?

ANSWERS.—1. Both are bad lumber for hives. 2. On good land 2 pecks. On poor land 3 pecks. Buckwheat honey generally sells for considerably less than clover.

3. I have no experience with the Dewey. The Daisy is good.

4. I'm not sure I understand the question. If you can buy from some bee-keeper near at hand it may be better than to send some distance to a queen-breeder, as express rates are high.

Transferring Bees from Frame Hives.

How do you transfer a colony of bees from one frame-hive to another?

ANSWER.—That depends. If the frames are of the same size, all you have to do is to lift the frames from one and put them in the other. If, however, you change from a larger to a smaller frame, cut the comb out of your larger frame, lay the smaller frame over the comb, mark with a knife where it comes, lift off the frame, and cut the comb so it will fit a little snugly in the frame. Take a board as large or larger than the frame, lay on it a number of strings, lay the comb over, and crowd the frame over it. Now tie your strings, raise the board, comb and all together, so the comb will not tend to fall out of the frame, take away the board, and hang your frame in the hive. If you change from a shallower to a deeper frame, then you must change the comb from horizontal to vertical, cut off the surplus, and then fill in the vacancy with another piece.

Feeding for Increase—Feeding Granulated Comb Honey.

1. Having plenty of honey to feed, how can I increase and have all colonies strong in July?

2. Should granulated comb honey be melted and fed to bees, or would it do to uncup and put the frames in the hive?

ANSWERS.—1. First encourage all colonies reasonably strong to become very strong by giving combs of honey wherever room can be found for them, only look out not to crowd the queen. Then from the very strong, brood can be taken to strengthen others. If a colony is very weak, take from it one or two frames containing more or less unsealed brood and give in exchange brood nearly ready to emerge. Keep all the time giving combs of honey wherever there is a chance for it. The best plan to increase depends a good deal upon your experience, conditions, etc. One plan is to put all but one of the poorest brood-combs in a second story a little before the be-

ginning of your July flow, leaving the queen in the lower story with that one comb and frames of foundation, an excluder between the two stories, and a week later setting the upper story on a new stand, giving it a ripe queen-cell.

2. Give the frames with granulated honey to the bees. If nearly all the honey in a comb is granulated, uncup and spray thoroughly with water before giving, repeating the spraying when necessary.

Controlling Swarming.

How can I control swarming besides cutting out queen-cells. I have 13 colonies of bees, so you can see that I am new at the business, but I expect to have 2 swarms from each colony, unless I find some way of controlling it. The season is very short here. It will soon begin. I expect to put on supers about the 15th of next month. My bees are all hybrids.

CALIFORNIA.

ANSWER.—Cutting out cells is not a success, but here is a way you may control swarming sufficiently to have only one swarm from each colony: When a prime swarm issues, set it on the old stand, with the old hive beside it. A week later move the old hive to a new stand 6 feet or more distant. That will make the field-bees join the swarm, weakening the old colony so that all extra cells will be destroyed.

Transferring and Feeding Bees.

1. I bought 2 colonies of bees last fall, and the one has 11 frames. The combs are crooked and "rusty." I would like to put this colony into a box-hive. Should I set the hive on top of the box-hive, and when the bees have combs started, would the queen go down? What time in the spring should it be done?

2. I want to feed them sugar syrup. What time should I start in the spring? Could I mix water and sugar together without boiling?

PENNSYLVANIA.

ANSWERS.—1. If you wait until the frames above are all filled with honey, or very nearly so, you will be pretty safe in taking away the upper story to find the queen below. It may take a good while, and if the season is very poor the queen may not get below at all. You can set the hive above any time after bees fly every day.

2. Unless there is danger of starving, don't feed till bees are flying freely nearly every day. No need to boil the syrup, only so the sugar is dissolved.

Section Honey with Holes.

A neighbor bee-keeper sent me a lot of honey to sell on commission. He said it was No. 1. When I opened the supers I found nearly every section with a big hole in the middle. Many others were only half full. What makes bees build that way, in your opinion? I thought he had a lot of degenerated bees.

NEW YORK.

ANSWER.—The first answer that comes up is: "I don't believe a word of it—you're fooling." But I can't believe you would trifle with the feelings of a guileless youth like me, and so I must resort to that overworked reply, "I don't know." Just to show, however, that I want to be obliging, I'll make a guess, although I doubt if it's the right guess. A bottom starter was used, and instead of having the top starter come down pretty close to the bottom starter there was a big space between the two. The bees began work on both, the harvest was poor, and the flow stopped before the two were built together. The man thought they were No. 1 sections because he hadn't taken them out of the super, and they looked all right above and below.

Spring Feeding—Transferring—Ants, Etc.

1. Out of my apiary of 5 colonies, only one will work in the super. What is the matter with them?

2. When would you advise me to begin feeding for spring?

3. I have one colony in a box hive which I wish to transfer. What is the best way to do it?

4. What is the best way to rid hives of red ants?

5. Which would you advise me to plant for bees—white clover or alfalfa?

6. Will bees gather honey from red clover, catnip, yellow mustard, and black locust blooms?

7. My bees are natives, I suppose, as they were taken from bee-trees back in the 60's. Would you advise me to cross them with Italians? They are certainly fighters.

MISSOURI.

ANSWERS.—1. Hard to say without more particulars. Perhaps the harvest was poor, the only colony storing being the strongest.

2. I wouldn't feed at all if the bees have plenty of honey. If they have not, feed as soon as they are flying freely; sooner, rather than have them starve.

3. Wait till they swarm, hive the swarm in a movable-frame hive, and in 21 days you have your choice to add the rest of the bees to the swarm and melt up the combs, or else cut out the combs and fit them in frames, as I advised "Illinois," and put them, together with the bees, in a new hive.

4. Trace them to their nests and pour in gasoline.

5. Probably all that you would plant of either wouldn't make much difference, unless you have many acres. Likely white clover would yield more honey in Missouri.

6. Yes, from all of them except red clover, and sometimes from that.

7. The introduction of Italian blood would probably increase your crops.

Getting Increase and Honey.

I have an apiary of 22 colonies which I wish to double in number, or more, if the season is favorable. I want as much honey as I can get, which will be extracted.

1. How would it do to take 2 frames of brood from each colony, say every 7 or 8 days, and from full colonies or nearly so, at once?

2. You say that you did that one year and it was a success in most cases, in preventing swarming. Wouldn't it be more sure if one were running for extracted honey?

3. If the colonies thus formed were given laying queens, wouldn't they soon be strong enough to help increase?

I have tried the nucleus plan of increase, which I would try if I knew what the season would be, but the honey-flow has always shut off for me.

My bees are in 10-frame Langstroth hives. White clover and smartweed are my only surplus crops.

ILLINOIS.

ANSWERS.—1. It ought to work. Better not say, "nearly so," but give the newly formed colony 10 frames of brood at the start.

2. Yes.

3. Yes, but you couldn't count on them for honey if you drew from them for increase, and not much in any case unless from the late crop.

Prevention of Swarming—Spring Feeding.

On page 70 is given your plan for the prevention of swarming.

1. Do you remove the queen-cells when you brush off the bees, and again when you put the frames back into the hive with the queen, or will the bees attend to that matter themselves?

2. Where bees are short of stores when taken from the cellar, and one hasn't combs of honey to give them, which is better, to feed them sugar syrup a little at a time until the honey-flow, or to feed them enough at once to last them?

3. "In this locality" it is not advisable to stimulate brood-rearing early in the spring. Would not the latter method be less likely to stimulate brood-rearing?

MINNESOTA.

ANSWERS.—1. Generally there are no cells at the first shift. If there are any that are at all advanced, there will be several, and as the combs are bared if none are noticed, no special search is made for them, but if one is noticed then care is taken to destroy any that are at all well advanced. At the time of putting down the brood almost certainly there will be cells, and they are destroyed. It is a question, however, whether that is necessary; just possibly the bees might attend to it themselves, although they would not attend to it at the first shift.

2. I prefer giving the big dose at once. Locality may make a difference.

3. Yes.

The Non-Swarming Secret.

In reply to my question you say on page 57: "I have a plan that fulfills the conditions of the Davenport plan; do you think it would be wise to give away the secret?" Most assuredly not. I think you said somewhere (though I can't find the page) that you "doubt if the secret were known that it would be much used," or words to that effect; so what's the use?

You might confer with Mr. Davenport and organize a secret society with yourself as Grand Irrefragable Perambulating Treasurer, and Davenport as Almost Illustrious Exalted Supreme Queen B, charging a good round admission fee, communicating the secret during the initiation. I would like to join as a charter

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member (if I can have an office), and secret societies are such a rarity (?) that you would have no trouble in securing a large membership and filling the treasury full to overflowing. Meanwhile you might whisper the secret to me.

I kept my bees from swarming 2 years ago by placing the brood over the queen with an excluder between. When buckwheat came on, I had my hives chock-full of bees. I also had several swarms in September, and that's rather late for Northern New York. I'd like to know how to stop them at that time.

I want to thank you for the kind and courteous answers you have given to my sometimes foolish questions from time to time. Your replies have been of much value to me, and I am correspondingly grateful to you.

NEW YORK.

ANSWER.—Yes, that's the plan given by G. W. Demaree, a Kentuckian who was prominent in the ranks some years ago. The plan is good, and the pity of it is that it will work only for extracted, not comb. The brood-combs being put above become extracting-combs. To prevent swarming in September (which is not usual, I think, but may come where there is a fall flow), it might work to try the same plan over again: extract the frames in an upper story, put them in the lower story with the queen, the brood above, excluder between. If this be done just as buckwheat begins, it seems it ought to work as well as earlier. If you try it, kindly report as to success or failure.

Danzenbaker Hive—Preventing Swarming.

1. What information can you give me concerning the Danzenbaker hive? Would you advise its use for comb honey? What style of hive do you use, and what advantage do you claim for it?

2. Do you like the 4 x 5 plain sections? Has it any advantages over the old style bee-way sections?

3. I have to colonies and I intend to run them for comb honey, and do not want any increase. Can I keep them from swarming? If so, how?

ANSWERS.—1. The Danzenbaker hive is shallower than the Langstroth, with closed-end frames. From a trial of two such hives side by side with the hive I am now using, I concluded I liked the latter better. It is the dove-tailed, with frames the same size as recommended by Father Langstroth, and has the advantage of being most common in use, simple, and with the Miller frame easily manipulated.

2. Some claim it an advantage to have a tall section because it looks more than a square one. A 4 x 5 section is also supposed to look larger than a 4 1/4 x 4 1/4 of the same weight, because having a larger surface, although thinner. After trying many other sections, some of them on a pretty large scale, I prefer the square 4 1/4 of the old style.

3. Not the easiest thing to do. You may be able to succeed by shaking swarms. See also something on the subject on another page of this number.

Nuclei for Increase.

Being a beginner, I am somewhat in doubt as to the method of procedure in forming nuclei for increase. If I am not mistaken you take 2 or 3 frames with brood and bees, including a ripe queen-cell, and place them in a new hive and set it on a new stand, and then gradually give them frames with full sheets of foundation, or better, with brood from other colonies.

1. Now the question is, by placing the nucleus on a new stand, won't almost all of the bees go back to the parent colony, and thus leave the nucleus without sufficient bees to take care of the brood? Is it necessary to close up the entrance entirely? If so, how and with what—that is, the entrance-blocks, or with grass or leaves—and how long would you leave it thus closed? Would they get sufficient ventilation if the entrance is closed entirely? If it is not necessary to close it entirely how much of an opening would you leave in order to avoid robbing?

2. Suppose you had one colony of pure stock, and 2 or 3 other colonies of hybrids. Now you wish to breed from pure stock, how would you proceed? Would you use the nucleus plan, or is there a better way? Would you cut out all the drone-comb in the hybrid stock? Is there any danger of in-breeding in thus breeding from but one colony?

ILLINOIS.

ANSWERS.—1. If the nucleus is forced from bees that have been queenless 2 days or more, the number returning to the old stand will be much smaller than if taken from a queen-right colony. Besides taking the bees adhering

to the combs of brood, an additional lot of bees can also be shaken from other combs. If the nucleus is formed from a queen-right colony, fasten them in the hive for 3 days by packing green leaves in the entrance. If you forget to open it, the drying of the leaves will open it. With no more than 3 or 4 frames in a full-sized hive there is no danger of smothering the bees.

2. Yes, the nucleus plan is good, or you can use natural swarming. Give sealed brood from the other colonies to your best colony, strengthening it so it will swarm first. Each time it swarms set the swarm in its place, setting the colony that has swarmed in place of another strong colony, and setting the latter on a new stand. This strengthening each time will result in its swarming a number of times, of course with an Italian queen each time.

Hive-Entrances in Winter—Transferring—Spring Feeding.

1. When bees are wintered on the summer stand with a chaff box around the hive, should the entrance of the hive be shut with a wire screen so the bees can't fly out, or should it be left open?

2. If it is left open will the bees come out on warm days and fly to the field, and never return?

3. What would be the best way in the spring to transfer the bees from a box-hive to a frame hive?

4. Is it a usual thing for bees when wintered in a chaff box to come out and die?

5. What is the best to feed in the early spring, sugar syrup or candy? How should it be made.

MINNESOTA.

ANSWERS.—1. The bees must not be fastened in. Those that try to get out will stir up the rest.

2. No.

3. Better not transfer till 3 weeks after the colony swarms. Then drum out the bees, cut out the combs and fasten in frames, unless you may prefer to add the bees to the swarm and melt up the combs.

4. Yes, it is the usual thing for a number of bees to die in the winter, no matter how they are wintered.

5. It is not best to feed either in early spring unless there is danger of starving. For this purpose either syrup or candy may be used. The syrup may be made of granulated sugar and water, pint for pint, and the candy like any candy is made, cooking the sugar in a very little water until it is brittle when dropped into cold water.

Either Chunk or Section Honey—Interesting Experiment.

I have a few colonies of bees in 8-frame dove-tailed hives with 4 1/4 x 4 1/4 plain section-holders. I am thinking of getting some small frames to fit these section-holders, for the production of chunk honey, perhaps only for my own use. My idea is to have both small frames and sections to fit these section-holders, so I can get either chunk or section honey—not both at the same time.

1. Would there be any advantage in this plan?

2. Would the bees work in the small frames more readily than in boxes?

3. Kindly tell me what kind of foundation is the enclosed?

4. I want to tell you of an experiment I have been making this winter. Last fall I had 2 colonies of bees so cross that I had to move them on account of the neighbors. A few of the bees came back and entered an empty hive near the old stand. I don't believe there was a pint of them. And in a few days I was surprised to find that they had built a comb about the size of my hand. About that time I requenched the old colonies, and for fear of an accident to a new queen, I thought I would put one of the old queens with the little swarm for safe-keeping. This was the last of October. As I did not care whether I kept them or not, so I made a box, or false bottom, 2 inches deep, the size of the hive, in the end bored a pin-hole, and put in a pipe 4 inches long. Then I put a shelf in the dry room of my mill where it is hot most of the time, placed the false bottom on the shelf and run the pipe through the wall to the outside. Then I put on the hive. That left them with no outlet except outside the building. I was shut down 2 weeks when the temperature outside ran down to 20 degrees below zero and water froze in the room. With that exception there has not been a day they would not take syrup, and they must have been breeding, as there are many more bees than there were last fall. They are very quiet and never come out except on days when other colonies fly. The jar of ma-

chinery does not disturb them. All my bees had a good flight yesterday.

MASSACHUSETTS.

ANSWERS.—1 and 2. Yes; bees store more in extracting-combs than in sections, and your small frames would be at least a little approach toward extracting-frames.

3. Thin surplus, I think.

4. This is decidedly interesting. It shows that when necessary field-bees may become nurse-bees. But the most remarkable thing is the prosperity of that little colony. According to my best judgment it ought to have been dead long ago.

Spraying Fruit-Trees in Bloom.

Is there any law which protects bees from being poisoned on fruit-trees which are sprayed when in full bloom? How can any one know whether his bees are being poisoned or not? Do they die in the orchard or return to the hives and die? People in this vicinity seem to disregard bees entirely when s-raying.

KANSAS.

ANSWER.—I don't know your State laws, but I'm afraid you have no law on spraying. If bees are poisoned you will find at least some of them dead in or near the hives.

Prevention of Swarming.

I have 5 colonies of bees on a 60-foot lot in the suburbs of Brooklyn, and don't want any more increase, as I don't like to give away swarms. I had 3 swarms last year, and gave away one swarm and 2 of the parent colonies.

What do you consider the easiest and simplest way of swarm management and no increase?

BROOKLYN SUBURBANITE.

ANSWER.—A little before time to swarm, if you remove the old queen, and destroy all cells but one before the young queens emerge, you ought to have no swarming. Perhaps you might like the plan on page 70.

Hive-Ventilation—Observatory Hive.

1. Would not an inch hole on each side of the super, with wire netting inside, be of some benefit in the way of ventilation in hot weather?

2. I have an observatory hive in which I expect to put bees this spring. How shall I get them started? This is my first year with an observatory hive.

MARYLAND.

ANSWERS.—1. It would not work well for section honey, but would for extracted, although I would rather give ventilation between stories by shoving the upper story forward.

2. There's no trick about it; merely start as you would in any other hive by putting in the requisite number of combs of brood with bees and queen. To prevent the bees going back to the old home, set the hive in a dark cellar 4 days or more.

Closing Hives When Spraying Bloom.

What would be the best thing to do with my bees in the spring when the orchard is being sprayed? We have a large orchard and I want to spray it at least 3 times this spring. Would it be a good idea to close the entrances of the hives, and keep the bees closed a few days after each spraying? The colonies are all in good shape and will have enough to eat during the time they would be closed. I have heard that the spraying of the trees when in bloom kills the bees when they work on the blossom.

NEBRASKA.

ANSWER.—It would be pretty hard on the bees to fasten them in the hives, although not so bad if kept in a dark, cool cellar. But there is no need to shut them in. No up-to-date fruit-grower would think of spraying an orchard when in bloom, even if no bees were within a thousand miles. It does no good to the fruit, and is a positive injury. You can spray before blossoms open, or after they drop, but if you want fruit you'll never spray when in bloom.

Balm Attracting Swarms.

Have you ever tried rubbing balm leaves on a certain limb of a tree when bees are in the act of swarming, to have them settle on that limb on the exact spot where the balm leaves were rubbed.

A friend of mine told me he had seen this plan tried, and it was a success. And another man heard him tell this, and said he was going to try it. Friend No. 2 says it was successful. So I am anxious to know if anyone else has tried the plan. If it is a good one, there is not much use clipping the queens, although I have my doubts yet as to the certainty of

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the thing. These are the first and only cases of the kind I ever heard of. ALABAMA.

ANSWER.—A swarm is more likely to settle in the place where a previous swarm has settled, but I have some doubt about balm attracting a swarm. In Europe there have been reports of success with some kind of lemon leaves. I yield the floor to any one who can report success or failure, although no amount of such attraction would take the place of clipping for me.

Originated the "Lyeing" Business."

On page 89 you charge Miss Wilson with being the originator of the "lying" business. That is a grievous charge, and it is utterly untrue. The originator of the lying business was that fellow who, in the garden of Eden, told our mother Eve that she should not surely die if she ate of the fruit of the tree which grew in the midst of the garden. You owe Miss Wilson an abject apology. She may be the originator of something that may be called the lye-ing business, but to charge, or insinuate, that Miss Wilson was the first of liars is piling it up too high. Come down, Doctor, and have the spelling of that word changed, or be forever the scorn of bee-keepers.

EDWIN BEVINS.

I submit the case to ye editor, and throw myself on the mercy of the court. C. C. M.

[Yes, it should have been the lyeing business, and not lying business. Dr. Miller need stand only half the court costs this time. Second offense may be more costly.—EDITOR.]

Increase and Improving Stock.

I recently came into possession of 3 colonies of bees, and am getting interested in them. I want to increase and also improve them by crossing with better stock.

1. What stock would you advise me to use? My bees are the common brown or black bees.

2. One colony is in a box-hive, and 2 are in King's patent. What do you think of this hive, made with double frames in body, and honey box, or super on top? Is it not all right where comb honey for the local trade is the object?

TENNESSEE.

ANSWERS.—1. You will do well to get an Italian queen.

2. It will do well enough to have the 2 King hives, but if you think of enlarging the business you better have hives with frames 17½x9½.

Using Disinfected Hives.

A farmer had given me a lot of empty and full hives in which the bees were affected with foul brood. I killed the bees, melted the combs, scraped the hives and frames last winter, then dipped them in boiling water. Now, would they be safe to use the coming season, or would they have to stand a year or more?

WASHINGTON.

ANSWERS.—Some say that hives may be used without anything being done to them. Others say they should be burnt out. Dipping in boiling water would probably make no difference, unless left 2 hours. It would be on the safe side to burn them out. Put in a little dry straw, touch a match to it, stir about with a stick so all parts are scorched, then throw in water. If you haven't straw, use a gill or so of kerosene.

Cockroaches and Bees.

What can I do for roaches? They bother the bees by getting in the brood-chambers, on sections, and all over the inside of the hive.

TENNESSEE.

ANSWER.—I didn't suppose cockroaches would do any particular harm in a hive where there are bees. You can poison them with some of the special poisons sold for that purpose or with any other poison, only you mustn't poison the bees. Put the poison between little boards only ½ inch apart, or in some vessel with a ½ inch entrance.

Making Increase with Box-Hives—Requeening—Carrying Hives.

1. I wish to make increase with a strong colony in an old box-hive. Would it do to bore holes on the top of the hive, put on an excluder, then follow the instructions on page 260 of "Forty Years Among the Bees"—increase without nuclei? Could I repeat the operation several times with the same box-hive?

2. Are those expressions synonymous—"test-

ed queen" and "laying queen," "untested queen" and "virgin queen?"

3. Should I like to requeen No. 237, in increasing after the method pages 255-256, what would be the best time and the best way to do so?

4. May I be permitted to suggest an improvement on the device Fig. 8, page 29? I would put the middle of the strap on the breast, then pass it around under the arms, and after it has been crossed, draw it over the shoulders; thus the load would be not on the neck but on the shoulders. QUEBEC.

ANSWERS.—1. Sure. You can repeat the operation just as often as you can get enough bees to go up and cover the combs well. Of course, much depends upon the strength of the box colony.

2. No; she's a laying queen as soon as she lays, but not a tested queen till you can see by her worker progeny that she is purely mated; an untested queen is a laying queen, but has not been laying long enough to show whether she is a tested queen; she's a virgin queen before she has met the drone.

3. Introduce the same as introducing any queen in a provisioned cage. The most convenient time is when brood is changed.

4. The suggestion looks good.

Mold in Hives.

I started to keep bees last summer, and had 5 colonies to winter over. Four of them are alive this spring, and seem to be in good condition, except that in 2 of the hives there seems to be something on the combs. It looks as if it might be mold. It seemed to come mostly over the cells in which pollen was stored. A few cells that were filled with honey were covered also. The pollen seemed to get thin and watery, and a bluish-white substance formed over the cells. I wintered my bees in a cellar. No fire was kept in the house all winter. Towards the last of February, when the snow began to thaw, some water came into the cellar and was there for 2 or 3 weeks. Two of the hives are made of basswood and 2 of pine. The basswood hives are the ones that were affected. What ails the combs? Will it harm the bees? If so, what should be done?

MICHIGAN.

ANSWER.—Don't worry; it's mold. See answer to Minnesota.

Treating Foul Brood in Spring.

I will be obliged to treat my bees for foul brood this spring. How early in the spring can bees be treated for foul brood? Or what is more to the point: How early in the spring may bees be depended upon to build comb if honey, or honey and syrup, is fed? If I could treat my bees early I would not lose so much brood, and may have a crop next summer; if left till fruit-bloom or later, I may have to allow this brood to hatch, which I very much dislike to do, because of the danger of spreading the disease again. IOWA.

ANSWER.—Bees will build comb any time when you can get them to take feed, if they have no room to store it.

Moldy Hives and Combs.

1. After mold has entered the hive, does it hurt the bees in any way?

2. Is there any way of getting the mold out of the hive? If so, how?

3. How can I clean a comb that has both moth and mold on it? MINNESOTA.

ANSWERS.—1. It doesn't seem to effect the bees particularly; the worst thing is probably its effect on the pollen.

2. Fresh air and sunshine is the best cure for it. In a strong colony it will disappear as the weather warms up.

3. Give such combs, one at a time, to a strong colony.

Bait-Sections—Packing Bees for Winter.

1. In putting bait-sections, or sections partly filled with comb, into supers when you put them on at the beginning of the season, wouldn't the super be filled better, that is, wouldn't all of the sections be more likely to be completed at the same time, if the bait-sections were put at the outside of the super? Wouldn't it be just as effective in getting the bees to go up and begin storing honey in the super? Any one might have one bait-section in the middle and the rest on the outside.

2. Next fall I expect to put 3 shallow frames of honey in the center of a super, having a

super for each colony, then just before I pack for winter I will put one of these supers on each hive. For out-door wintering which is best to do, to put the packing on each side of those 3 frames of honey and then put the winter-case over? or should I leave this space empty, and place another super filled with packing on top of all? Do you think it would be necessary to pack on each side of frames and then put another super of packing on top? PENNSYLVANIA.

ANSWERS.—1. Your views are all right. Bees will start soonest on a central bait; but if more than one in a super put them in the corners, or at least outside.

2. Better fill all empty space beside the honey, and then pack on top.

Preventing Second Swarms.

Suppose a colony of bees swarm and return to the hive from which they came (the queen having her wings clipped), how would you treat such colony to prevent them from again swarming? ILLINOIS.

ANSWER.—The same as if the queen were not clipped. See reply to Texas.

Foul Brood and Wax-Worms.

I wish information concerning foul brood and wax-worms. I have had bees only about 6 months. I purchased 2 apiaries (45 colonies in all) last fall, and the questions that I ask pertain to beeless hives that were in that condition about September 15, 1907, but did not appear to have been that way all season. No information could be obtained from the owner, who was an aged man, and not well. Some hives were just about half full of moth-cocoons.

1. Are good parts of comb all right for use this season?

2. How can I care for unused combs? Is it sufficient to have them in hives almost airtight, from cold weather on, or must I fumigate them just the same?

3. Are supers containing sections with foundation safe from the attacks of a moth if piled so as to be almost fly-tight, or must I fumigate these also?

4. Just one hive suggested foul brood to me. This had a sour, disagreeable odor. No moth-cocoons were there at all. A great many brood-cells had the capping raggedly gnawed, and the skeleton-like skin of the larva lay at the bottom of the cell. Other cells contained something that appeared like a dark salve, or the color of crude oil. Possibly this was dry pollen, but it puzzled me. Is it your opinion that this one colony perished from foul brood? No matter what the cause, is it safest that I destroy the combs? IOWA.

ANSWERS.—1. If the larva of the bee-moth have destroyed only part of a comb, the rest is all right to use.

2. A comb that has been out through all the freezing of winter without any bees on it will be all right if kept in a place so close the bee-moth cannot enter. If bees were on it, there will almost certainly be worms or eggs in it.

3. I have never known moth to attack these. 4. Hard to be positive, but I don't believe there's any foul brood in the case. If none has been in the neighborhood, you might use the combs, watching closely.

Management for Prevention of Swarming.

1. Your plan for preventing swarming, on page 70, is surely a splendid one. Will this plan work equally well, no matter how near the colony is already to casting a swarm?

2. Does it work after queen-cells are started? Or, if there are already sealed queen-cells, must these be destroyed when shaking the bees?

3. Is such a colony cured of the swarming fever for the entire season, or must it sometimes be given this treatment twice to be on the safe side? Please tell all you know about this plan, as it will surely be thankfully received by all readers of the American Bee Journal.

4. Why does Mr. Davenport not give away his secret?

5. How about the Alley queen-trap for preventing the loss of swarms? How often is it necessary to visit the yards if these traps are used? and what treatment should be given the colonies whose queens are in the traps if no increase is desired. TEXAS.

ANSWERS.—1. I have never tried the plan until cells were started, and the nearer swarming the better. In fact, it will work all right, I feel

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confident, if you wait till the colony has actually swarmed.

2. All cells should be destroyed at first operation, although no harm will come if some are left so young that the queens would not emerge until the brood is put down. All you care for is to have none hatch out while over the excluder. At the time of putting down the brood all cells must be destroyed, but not many will be started after the brood is put up.

3. I think the chances for future swarming are exactly the same as if the colony had swarmed, no more, no less. Of course I can not be too positive about this without more experience. If a colony be treated very early, I should rather expect it to swarm, just as I would expect a very early strong swarm to cast a virgin swarm.

4. He thinks it would make bee-keeping too easy, too much honey produced, and prices lowered.

5. All that the Alley trap does is to hold the queen when a swarm issues. A swarm may be shaken when a queen is found in a trap, or the treatment on page 70 used.

I may add that if you work for extracted honey there is no need to put the brood down. Only in that case I should fill the lower story with full sheets of foundation. The Sherzinger plan is to wait till a colony swarms, then give the queen a lower story filled with foundation, putting all the brood above an excluder.

A Beginner's Questions.

I have kept bees for a number of years but never had any success with them.

1. Will a bee-book help me? My experiments with the bees almost always went wrong.

2. Do you feed the bees between honey-flows? I find sometimes that young bees are carried out of the hive dead. Don't you think there is danger of starving?

3. I have had a little experience in preventing swarming. I made a 14-frame hive and a 14-frame super. I hived a big swarm in that the 4th of July. The bees did not store any surplus that year, but the next year I put on 2 supers and there was no swarming that year, and the bees stored 100 pounds of honey. In the spring of 1907 the colony was weak. The first swarm that came out of the other hive clustered on the first hive and went in and stayed. There was no swarming in 1907. Don't you think that if they have plenty of room they will not swarm?

4. How many frames are there in a nucleus hive? Where can I get one of Italian bees?

5. How can I prevent butterflies from going into the hive and laying eggs, which destroy the bees? I have had a number of colonies destroyed.

MINNESOTA.

ANSWERS.—1. I hardly know how to put the answer strong enough. It would be a gain if each bee-keeper would get a bee-book before he owns a bee. I'm certain I would be doing a favor to all without such a book if I should say, "I'll not answer a question in this department till you get a bee-book and study it." But I dare not say that, for some would think it only laziness on my part, and would be angry. Let me assure you that it is big money in your pocket to invest in a good book.

2. Generally it is not necessary to feed between flows, if plenty of honey is in the hives, but if there should be a spell of dearth long enough to stop the queen's laying, then it would be wise to feed.

3. Abundance of room will not always prevent swarming, but it will go a long way toward it. Plenty of room for the queen is the best kind of policy.

4. Nucleus hives vary greatly. One may be made to contain 3 or more frames of very small size. Except for queen-rearers, hives of full size containing 2 to 4 full-sized frames are generally used. Indeed, some queen-rearers prefer full-sized frames. You will find Italian queens advertised in this Journal.

5. Strong colonies are the best prevention against the bee-moth. But Italian bees will keep them at bay, even if not so very strong.

However, there are symptoms of bees not having wintered well unless they were well provided as above. I have now taken out of the cellar about 280 colonies, and have found only 2 dead. These were bees taken from a neighbor just before cellaring, and had to be shaken on cold combs of honey, so they should not count.

R. F. HOLTERMANN.

Brantford, Ont., March 26.

Wintered Well in Shed.

I have taken 40 colonies out of a shed where I had them all winter, and they seem all right. I lost only one out of the 40 colonies. I have 100 colonies in the cellar and will try to take them out this week.

WM. J. HEALY.

Mineral Point, Wis., March 30.

Stray Swarm in December.

I had a swarm of bees come to my place the last week in December last, and went in with a small colony I had. Did you ever hear of anything like that before for that time of the year?

DAVID MAINWARING.

Barclay, Kans., March 5.

Bees Wintered Well—Good Prospect for Honey.

I have just finished examining my 90 colonies of bees. I find them in fine condition, strong in bees, and plenty of honey, with a loss of 3 colonies. I winter them on summer stands, using leaves over the bees to absorb the moisture. We have a fine stand of white clover, and the fruit-buds have not advanced as far as they were last year at this time. If the weather continues favorable, everything bids fair for a good honey crop this year.

J. G. CREIGHTON.

Harrison, Ohio, March 16.

Bees Wintered Well.

I have wintered my bees out-doors this winter with great success. My colonies have come out strong, and not one queenless colony.

CHAS. SMITH.

Hannibal, Mo., March 16.

Very Mild Winter—Bees Breeding.

This winter has been very mild—no snow at all, and only a little white frost in the morning 4 or 5 times. There was not one week that bees could not buzz around. February 1, I opened all the hives and fed about 200 pounds of honey, sealed in combs of course, and they seemed to be doing well. I found brood in one or two combs in the most of them, and it looked as if there were more young bees in them than some seasons over 2 months later. I honestly believe that they have kept on breeding all winter. The thermometer has stood most of the time around 50 degrees, and the extremes have been 30 and 70 degrees. When it is cold at night it is generally fine weather, and warm, during the day.

But say, can you give me the address of that \$7,500 pretty girl? A man never knows what may happen. Maybe Miss Wilson held that back purposely, for some reason. For my part I would be willing to knock off the first figure if I could get \$500 worth of honey next season.

O. K. RICE.

Wahkiakum Co., Wash., Feb. 27.

Bees Carrying Pollen—Mild Winter.

This beautiful, spring-like weather my bees are at work as if it were summer-time, carrying in pollen. If the weather continues this way bees will do well. But it has started too warm like last year. We have had a very mild winter. There have not been many days that the bees could not fly. Maples are in bloom, and peaches will soon be.

R. B. PERRY.

Greenfield, Tenn., March 5.

Home-Made Bee-Hives.

Did you ever make a bee-hive. Did you ever make two of them? And were they both the same size?

After spending a few years in the planing mill, running different kinds of machines, and putting the work together, I will say to the man wanting good hives, don't use home-made, but get them from the supply-house or send to the factory for them, where they make a specialty of that kind of work, where they are prepared to do it with their special machines, then you can rest assured that each hive will be exactly the same size, everything fitting nicely. It will then be a pleasure to nail them together and get them ready for use;

then, too, the inside fixtures can be changed from one hive to another, or be replaced by new ones if necessary; all being of the same standard size where there is no trouble or worry about their fitting.

Do not trust the mill-hand to cut out a few hives for you, unless you are there to watch the work, for little he cares about the lengths or widths, whether they are just right or not, or whether the stock is what it should be. The general mill-work does not need to be so accurate and close—their work is quite different.

To make a hive by hand requires a skilled mechanic, and good tools. It is easy to vary the size of a hive a sixteenth of an inch or even more, getting some pieces a little too long or a little too short, making a bad mess of the frames when it comes to putting them in or exchanging them, which is often done.

The corners of a hive should be dovetailed together, then you can nail from both ways, making a corner that will stay and not open up in a short time. A mitered corner is equally as good, but harder to cut and fit together.

I would not advise hand-power machines or buzz-saws; they are only an aggravation. Before purchasing a buzz-saw, it would be well to get insurance on each finger for its full worth. It is an old saying, "Don't monkey with a buzz-saw," and I wish that I had not.

C. K.

Mechanicsburg, O.

Bees Wintered in Cold Cellar.

Bees are in good condition in this locality, and the warm days we had gave the bees an opportunity for a cleansing flight after their winter confinement. I moved my bees last November 8th, 3 miles, over very bad roads, and put them into the cellar without having a flight, and the cellar isn't dry. Sometimes it froze in the cellar, but I never had my bees in as good condition as they are this spring. I lost none, and all have good queens, as they have brood in the hive, and eggs, too. I put nothing over the brood-chamber but the cover.

NICK JENTGEN.

LaMotte, Iowa, March 30.

Chilled Brood and Foul Brood.

MR. EDITOR.—On page 321 of the last edition of "Langstroth," by Dadant, in giving advice on shipping bees to the South in the Fall, and returning them to the North in the Spring, the author uses the following language:

"As the colonies become strong very early in the South, if they are brought back North before the warm weather, their brood may become chilled, and a tendency to the development of foul brood is encouraged."

Now, what I wish to know is, what relation is there between chilled brood and foul brood? If chilled brood induces foul brood, then it is easy to understand why there is so much foul brood; or, rather, it is a wonder there is not much more than there is. Will Mr. Dadant explain through the American Bee Journal what he means by the above statement. You know we regard him pretty good authority on almost anything pertaining to apiculture.

WM. M. WHITNEY.

Evanston, Ill.

We referred the foregoing to Mr. Dadant, who replies as follows:

There is no connection between chilled brood and foul brood, that is, the decayed brood does not usually contain the germs of foul brood, but the authors believe that with the presence of decayed brood, pickled brood or other filth, there is more room for the development of the germs of foul brood if those germs should happen to be present. Filth does not usually contain the germs of typhus, Asiatic cholera, or yellow fever, yet it is a generally recognized probability that the germs of those diseases will propagate more rapidly in such conditions as are found in ill-kept homes. Likewise it seems quite probable that there is greater danger of the propagation of foul brood (the germs of which must originate somewhere) in hives containing decayed brood. We recommend care in the avoidance of decayed brood on the same principle that the boards of health of a city enjoin cleanliness to avoid epidemics.

C. P. DADANT.

Queens and Drones—Propolis.

I have seen so much in the bee-papers about queens and drones. Now here is the right way of it: The queen that has been fertilized rears fertile drones, because they will breed, and that shows they have been made fertile, no matter how. Now the queen that has never been fertilized, every one admits, lays unfertile eggs. That means unfertile worker-eggs. Now that is the difference between the two kinds of drones—one fertile and the other



Wintered Well on Sugar Syrup.

Bees are coming out in excellent shape where they were provided with sugar syrup stores last fall, or in districts where the flow was good.

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unfertile, that is, drones that never will breed? Now when this queen begins to lay, it lays in worker-cells, never in drone-cells, and lays all worker-eggs, never drone-eggs. All queens lay worker-eggs first. I have had queens lay all summer without laying a drone-egg. Sometimes you may see a good queen rear a few little drones among worker-bees in worker-cells, but they are all from worker-eggs, just the same; only a little mistake in being made unfertile, that is all. So you see all these unfertile drones are reared from unfertile worker-eggs.

A man says about propolis, "It will always be a mystery to man where they get such, and how they obtain it." Now there is no mystery to me about it. First, there never was a bee living that went out after such stuff on purpose. No one ever saw bees bring such stuff to the hives till the fruit through the country was getting towards ripe, and when the weather was right. There is a little hairy-like stuff grows all over most kinds of fruit, and of just the right length to come even with the pollen places on the bees' legs. This hairy-like stuff has a little waxy stuff on top of it, and when the bees are after honey and licking all around and around so much, never looking for pollen or anything but honey, this waxy stuff begins to catch on the pollen places on the bees' legs, and when it begins it goes on easy. Now this is the way the bees get what we call propolis and never in any other way. They never try to make any use of it for any purpose whatever; just to get rid of it, and that is a hard job. They stick it on anything and everything. I have seen both legs sticking together many times when the bee was trying to get it off.

JOHN McCANDLISH.

Delhi, N. Y., Feb. 21.

[The foregoing original views are given without the endorsement of the American Bee Journal as correct.—EDITOR.]

A Queen Experience—Newspapers for Wintering.

I had a very curious thing happen to me this winter in reference to queens that I introduced late last fall, and I haven't been able to think out the reason. In September I introduced 2 queens to 2 colonies that I made queenless the day previous, and in January I found 2 dead queens on the alighting-boards, and felt very much concerned over the loss. Saturday, March 7, being a warm day, and the bees were flying nicely, I made an examination of the 2 hives and found the two ladyships hard at work with quite a large batch of sealed brood and quite a large batch of fresh-laid eggs, also 2 old queen cells that had been badly ripped apart on the side—I suppose where those queens came from, but on examination of those queens that I found dead, I felt assured that they were fully matured and had met the drone. Now I cannot account for the above as the bees had no reason to supersede their queens.

My bees have wintered far beyond my expectation. I examined 29 hives on Saturday, and made some changes, putting all winter covers over them, and I found hives with ample stores and no less than 4 frames fully covered with bees. I didn't find any of the hives that had less than 4 frames and some had 6 with lots of brood and eggs for this time of the year.

My bees were all wintered on the summer stands, protected only with newspapers. Now I see in reading several bee-papers, that there's quite a lot of controversy over wintering bees with newspapers. I think if the hives are thoroughly painted, so as to exclude the weather, and have several thicknesses of newspaper tied carefully over the super covers and around the sides of the hives, with a galvanized-iron cover, and plenty of nature's stores, a good, strong colony of bees will winter in the altitude of Philadelphia in any kind of weather. I found only one dead colony in 37.

My crop of honey last year amounted to 1850 pounds from 17 colonies, and an increase of 20 colonies. The season was rather "off" for this neighborhood, but I consider that amount of honey a pretty good showing, considering all conditions.

GEO. M. STEELE.

Philadelphia, Pa., March 10.

Swarming—Hive-Covers—Wintered Well.

I examined all my colonies of bees this week, and clipped all queens that I found unclipped.

I do not replace any queens unless they show some failure. It does not pay here. I examine my bees each year about this time, if the weather is good, as the queens are not

so hard to find as if done later in the season, when there are more bees in the hives. It is a great help to have clipped queens, in swarming time.

When the bees are seen to begin to cast a swarm, I, or some one of the family, catch and cage the queen and remove the old hive to a new place at once, and put in its place an empty hive with starters of foundation in the brood-frames. As soon as the bees begin to come back I release the queen so that she can go in with the bees. I also find it a great help to place a frame of brood in the new hive.

Bees do almost as well here if handled as above, as if they had not swarmed, unless it is late in the season.

The next day I remove the super from the old hive and place it on the new one that the colony (or swarm) is in. It is not often that there is brood reared in the sections, and very little pollen carried up into the sections.

I make an extra cover to go on top of my hives to shade them in summer and protect them from the weather in winter. It is a great help in saving the colony, and still gives the bees shade. I do not mean some flat boards laid on top for the ants to build and rear young under. I use a roof-shaped cover. I cut a 1x10 inch board in lengths of 26 inches, and end-pieces 4 inches wide in the middle, tapered to one inch at the ends. Any kind of lumber will do for this unless it is some kind of wood that will rot easily. The reason I use one-inch lumber is that it is not so easy to blow off. I have tried lighter lumber but had to use a weight.

I have not lost a single colony of bees this winter. All were wintered on the summer stands. There are only 3 weak colonies in the lot of about 100. Only 2 colonies were queenless, and one of them was queenless last fall. Prospects are good for elm, maple, and fruit-bloom. Clover is looking fine at this time. We are expecting a good harvest this year.

I am preparing to commence queen-rearing as soon as I see drones flying. I find my own reared queens do as well or better than the ones I buy.

W. A. SWEARINGEN.

Lewis Co., Ky., March 24.

Fair Crop—Bees Wintering Well—Feeding Sugar Syrup.

My honey crop was only fair, but I think pretty good for such a poor season, and the condition the bees were in, as more than half of them were mere nuclei on May 15, 1907. Had I not taken the best care of them and fed them thin sugar syrup, I never could have made the increase I did, let alone getting any honey. We had a fair flow of clover and basswood honey, but buckwheat and fall flow of honey were nearly a total failure. I had on over 600 sections, but got only 75 pounds. From beginning to the end it was the poorest season I have had since I have kept bees. I had to feed them nearly one barrel of sugar last fall to winter on, as the most of them were light in stores. But they went into winter quarters in good shape, and have wintered fine so far. I have some in the cellar, some out-doors, and 6 colonies buried in the ground, or "clamps," as some call them. I will report next spring as to how they wintered in the clamps.

We have had a very mild winter so far. It has not been down to zero yet. The bees that are out-doors have had 3 flights this month, and are out to-day. I think they will winter all right out-doors.

I am a firm believer in feeding sugar syrup both fall and spring, especially if they can't get any honey. In spite of the poor season, and losing over half of my bees last spring, I have made some money out of them this year.

I think the American Bee Journal is fine, and worth twice the price asked for it. I hope all the readers will send in their reports whether poor or good, as we should tell of our failures as well as our successes with bees.

EDW. A. REDDERT.

Baldwinsville, N. Y., Dec. 29.

Bees Hard to Work With—Bad Winter.

The last season has been one of the most trying to the bee-keeper. In the first place, the bees came through the winter in No. 1 condition. They bred up to boiling over with bees. Then the cold set in and rain about every other day, and this kept up till June 15. Then the bees were starving by the thousands. All of this time there was no honey to be gathered. Then the weather changed, and what bees were left began to gather a little honey and pollen; and till the honey

season was over they stored plenty to winter on and surplus besides.

It was the hardest season to do anything with the bees. You could hardly make them accept a queen. When you would try to introduce a queen they would ball the cage. The ball would get as large as your fist and remain that way for a week at a time, and no let-up. They killed 3 out of 5 queens for me last season, and I never lost but one before in 24 years. They would keep the cage balled if I did not interfere with them.

This is a bad winter for the bees, as they do not get to fly any. They are soiling the hives at the entrance as they crawl out of the hives. It is too cold for them to fly this winter, and if it does not become warm enough soon so that the bees can fly, there will be lots of dead colonies in the spring.

HENRY BEST.

Hibbetts, Ohio, Jan. 26.

"Attic" Bee-Keeping.

The honey crop in this section with many bee-keepers was a failure, with others it was a partial success. I have seen no "fancy" and very little No. 1 honey on the market this winter, although it is in good demand and at a good price.

We live in a city of 40,000. The houses are about 20 feet apart on each side of us. The past year I had 4 colonies in my attic, and they gave me 400 pounds of comb honey. The best yield from a single colony was 178 pounds. I have had bees in the attic for 5 years, and never had a swarm. They never show any inclination by building queen-cells.

I always feed between fruit-bloom and white clover, as many colonies will starve at that time if left light in stores from the previous winter.

Last spring the 4 colonies carried away each day 2 quarts of water in which I put a tea-cup of granulated sugar.

At fruit-bloom I give each colony an extra hive-body and combs, and manipulate them so as to have 20 frames well filled with brood, and so have lots of bees for the harvest, which lasts about 2 months.

I use a frame of the Danzenbaker dimensions. Just before white clover blooms I take away 10 frames containing the last brood, and replace with supers containing full sheets of foundation and baits. I have never failed to get a surplus if there was any in the field, and I have never had to feed for winter.

I can control the temperature in their room to a certain extent, so I keep them cool during the heat of the day and give them lots of room.

I never keep a queen over two years, but always replace with a pure one from a reputable dealer.

I am a locomotive engineer and when off the road my spare time is spent around my home with my bees, from which I take a great deal of pleasure, a great deal of sweet, and some profit.

My bees have never stung any one viciously, and teams are often driven under them to unload coal, and have never had any trouble. It is no trouble to dispose of all the honey I have, among our neighbors.

Elmira, N. Y.

P. F. CONKLIN.

Bee-Papers for Beginners—Poor Season.

In the summer of 1905 my father told me and my brother that we could keep some bees, and that struck us just right, and gave us the bee-fever about proper. We thought bees were honey. We had one colony to begin with, and toward fall we bought 10 more colonies from an old bee-keeper who kept bees on the "let-alone" plan. These bees were short of honey and we did not know anything about feeding bees, and of course the man of whom we bought our bees did not tell us anything either, so we were left alone to venture into the business. I was 19 and my brother 14 years old.

In January, 1906, we put our bees in an open shed, and of course we had to peep in occasionally to see whether they were all alive yet; and when spring came we had 4 colonies left for the harvest. That was a hard jolt for beginners, but it didn't cure us of the fever. We still hoped to get a good lot of honey. When fall came we had about 50 pounds of honey in all. Well, we found out that bees were not honey.

In December, 1906, my brother died, and I was left alone to continue in the bee-business. But that winter I had read how to feed bees and I didn't lose any out of 5 colonies, but one was rather weak and in an old hive, so I concluded I would transfer them, but they didn't do any good, so in August, 1907, I united them with another, and I got only one

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swarm during last spring and summer, so I still have only 5 colonies, one of which I Italianized in July, and another in September, but I am not certain as to the latter.

In the summer of 1907 I got about 150 pounds of salable honey which I sold on short order, as it was a very cold and backward spring, and there was no fruit except berries.

Here I aim to give a little advice to the beginner: Go slowly! Subscribe for one or two good bee-papers, and get a book on bees. I can plainly see that if my brother and I had subscribed for some good paper a few months before we went "into the oven to get roasted," we would have saved several dollars, although we were not long in subscribing for bee-papers.

I now have 5 colonies in winter quarters, well packed with a water-proof cover telescoping over the whole hive. I have this to say—had I not read on the subject I wouldn't know half of what little I do know.

Helena, Mo.

W. E. TRACHSEL.

Northern Michigan Bee-Country.

On page 23, "Michigan" would like to know about the honey-resources, also climate of upper Michigan, from a bee-keeper's standpoint. The writer has been only as far west in upper Michigan as Alger County, where, on the hardwood "cut-over" there are large quantities of wild raspberry, in some places enough to furnish pastureage for 200 colonies in a yard, on this alone.

There is the "pin cherry," so called by the settlers; also "popels," that furnish early honey and pollen, about the same period as the fruit in lower Michigan.

I cannot say about the spring flow earlier than the "pin cherry," or during April; likely there would be but few days in April that bees could fly, in this north location. They would likely be better off in the cellar most of April. This reminds me that some of the bees in lower Michigan were not taken from the cellar until the very last of April, last spring; also that it would be necessary to winter bees in the cellar, or special repository, in this north part of the State. A few bees are kept near the "Soo," is all I know of in upper Michigan, although I have had several calls for honey from upper Michigan, from advertisements in the bee-papers. I do not know whether any of them keep bees, or not.

If I were "Michigan," I would take along a few bees, were I moving up there, for I'm quite sure he would succeed, as far as the resources are concerned. Then when he got a crop of honey he would have one of the very best home markets there is anywhere.

Then think of locating in a place where there is not a single bee but your own! Keep them pure—I should think so! But I suppose I have said enough, so he will take along some "seed" in his vest-pocket.

Remus, Mich.

E. D. TOWNSEND.

Some Bee-Experience.

I have been a subscriber to the American Bee Journal about 3½ years and since I have been reading its pages I have learned about bees what I consider is worth to me many times the price of the Journal. Before I began to take it my bees used to swarm themselves to death, and I didn't know how to stop them, but now I let them swarm only once. I set the new swarm on the old stand and move the old colony to a new location 7 days later. That is the "finish" for the rest of that season. I am waiting to hear from Mr. Davenport. He is going to tell us how to keep them from swarming at all—perhaps.

I want to thank Mr. H. A. Smith for telling us about his discovery, page 72—(1907)—combined hive-cover and feeder. As a cover it is good on account of the 2-inch air-space. As a feeder I believe it is the best I have ever heard of. I want to give it a trial at least. No loosening either top or bottom-board to feed that way. I have always tried to feed out in the open. Then the strong colonies got all the feed, for what little the weak ones did get would be taken away from them again, for the strong colonies always turn out to be robbers, and the weak ones have to die. But it is only a short time till the others follow, for I can't get them through winter.

Six years ago I began to buy some bees. Yes, and I have been buying ever since. The first season I bought one colony in the spring, increased to 4, tried to winter them in the cellar, but they all died. The second year I bought 26 in the spring, increased to 58, wintered them out-doors. Almost all of them died. The third year I bought 21 at the close of the swarming season. In the winter I left part of them out and put the rest in the cellar. I lost most of them from the cellar. Those left out-doors got covered up with a

4-foot snow-bank, and I left them there till spring. I lost one, but some of the others came through very weak.

The fourth year I bought only 1 colony, but I put 30 in the cellar of a vacant house. Last spring only 4 hives had any live bees, and I lost one of those colonies later. I went out to look at them one day, and in front of one hive I saw a queen and 4 or 5 workers. They were apparently trying to get the queen to go back into the hive, so I pushed the queen in. Soon she came out again. I sent her in again and she came out. Then I opened the hive. There was not a live bee in there, so I put the queen in front of another hive. She went in, but I found her dead later. Last spring I bought at different places 13 colonies. I have 19 now (at least, I think I have), buried out in the orchard. My wife says if she were I she wouldn't dig them out next spring, just let them be, hives and all, as I have hives enough left anyway. I have about 50 besides what I have broken up for kindling.

I was not the only one that lost bees last spring. I know of one man that had 70 colonies, and lost all but 12. Another had over 100 and saved only 13, and others in proportion. This all happened around Waterloo, Iowa.

February 4.

Poor Season—Production and Sale of First-Class Honey—Advice to Beginners.

Our apiary of 75 colonies in 12-frame Langstroth hives, was reduced to 68 colonies last fall, owing to the loss of young queens at mating time.

We have passed through a poor season. Our crop of honey, all extracted, was a trifle over 2000 pounds. We sold 500 pounds in one-pound square jars. This went to the groceries. The balance was sold in 10-pound friction-top pails to private families. We find that the one-pound square glass jars are a splendid advertisement, but it pays to look well to the trade in 10-pound pails. For 15 years nearly all our honey has been sold in the near-by towns and cities, and I am my own salesman, with my son as assistant.

This is the way we produce first-class honey, which always runs short before we get around to all the customers: We put our crop of clover and basswood honey in large settling tanks, and leave it until we get our fall crop of honey, which is mostly from touch-me-not. This is poured into the tanks of white honey, which makes a blend that is fine. One of the secrets of success in disposing of our honey so readily is that we extract our honey only twice in the season—once when we take off the white honey, and late when the fall crop is nearly all sealed, or about the time we get our frosts which kill the flowers. Our honey is always ripe and rich, with very little honey-dew to give it a rank taste and dark color.

The one-pound glass jars we sell for 15 cents each, and the 10-pound pails bring \$1.10.

I find it a great advantage to be able to sell one's own honey, and always try to have a ready answer in making a trade. We also sell considerable honey to druggists and candy shops, also to parties that manufacture and sell prepared medicines. So much for producing a high-class honey.

Now a word to my young bee-keeping friends: Don't take your honey off the hives until it is ripe and sealed in the combs. Don't be satisfied until you can put as good honey on your market as is produced in your locality. Don't try to fool your customers with thin, unripe honey. Be honest; be a man—or a woman, as the case may be.

We often find those that prefer the honey in the comb. We try to tell them where they can find it for sale, but never argue and urge such persons to buy our extracted honey instead, for, as I said before, we never have enough to get around.

Lakeville, Ind., Jan. 1.

C. A. BUNCH.

Requeening Without Buying Queens.

On page 55, Dr. Miller gives Mr. Walter M. Adams a method for "simple requeening without buying queens," which is an easy method, and can be worked by any one, even with box-hives.

Now, before we have Dr. Miller's plan scarcely read, Mr. Alexander comes in Gleanings for Feb. 15, on page 210, and says, "The most common and worst mistake that can be made in rearing queens is saving the natural cells and virgin queens from colonies that have cast natural swarms." Then follow his reasons for his statement.

I would be pleased to have Dr. Miller comment on this part of Mr. Alexander's article,

especially the part relating to perpetuating the swarming propensities by the use of after-swarms and queens reared under the swarming impulse. Surely the Doctor's experience of nearly half a century ought to throw some light on the subject.

My plan for the coming season is to save all the fine, large virgins from my very best colonies when the after-swarms come forth, and place them in 2-frame nuclei for mating. Then I will requeen my poorer colonies with these same queens after mating. This is practically the same as Dr. Miller's plan, given to Mr. Adams; only I think it will make a little less work for me. However, if this is going to perpetuate or intensify the swarming propensity I will have to give it up. Mr. Alexander's reasoning looks plausible, but what are the facts in the case? Undoubtedly there are quite a good many small or amateur bee-keepers like myself who are interested in this matter.

Last season was very poor here. Bees nearly starved till basswood bloomed when they commenced storing a little, and they continued to store very little until the fall flowers bloomed. During the blooming season of heartsease, the best colonies stored from one to 3 supers of light amber honey of fine flavor, but did not fill the brood-chambers well, and of course, many colonies went into winter quarters short of stores.

Clover is wintering well here, and we may have a better season for the bees this year than last.

E. H. UPSON.

Cromwell, Ind., Feb. 22.

Prevention of Afterswarming.

I had some experiences during 1907 that were entirely new to me. For a number of years I have waited for from 5 to 8 days after colonies have cast swarms, and then cut out all but one queen-cell to prevent afterswarms. Last year I practised the same plan on the first 12 swarms, and out of the 12 colonies so treated 6 were queenless and one of the other 6 queens was a drone-layer. After that experience I let the parent hive sit close beside the swarm 4 or 5 days (I have all clipped queens), and moved to a distant part of the yard, and only one colony treated in this way swarmed, and they swarmed in about ½ hour after moving to the new stand. Now, the point is, why so many queen-cells failed to hatch. Was it the cool, rainy weather, or did the young queens fail in getting mated, or did they chill and not get back from their wedding flights? At least, a part of the trouble was the queen-cells, for no less than 3 cells that I hung in nuclei, in West queen-cell protectors, failed to hatch.

There were none of the old rules that held good last year. The usual time to wait after swarming to cut queen-cells is 8 days; but in one hive that I opened 4 days after swarming, 3 cells were already hatched.

Another disagreeable thing we had to contend with during 1907 was robbing. I never saw anything in my experience to equal it. The bees simply went from hive to hive "seeking whom they might devour," and the boss had better keep his veil handy or take a big dose of rheumatism cure, whether he needed it or not. I had a swarm out of No. 31, with a clipped queen. I also had a swarm out of No. 17. Four or five days after, I placed No. 31 next to swarm out of No. 17. A few days after, a swarm issued from No. 31, with a flying queen, as I supposed; but when I walked down to No. 31, I found another clipped queen. The next thing to do was to find where the second clipped queen came from out of No. 31. When I came to examine the hive that contained the prime swarm out of No. 17 on the same stand, it was empty. Therefore the swarm, queen and all, out of No. 17 must have gone in No. 31 some time when I wasn't looking.

Another unusual thing in other years, but very common in 1907, you would get only 1-2 or 1-3 of the bees of a prime swarm in the hive on the old stand; but they would go in anywhere, part in hives on each side, or possibly in another part of the yard. I had a swarm from a prime swarm that had been hived only about 30 days, and when I examined the hive from which the swarm issued, there was not a cell of honey nor a cell of brood, except 2 queen-cells. I cut those out and put an afterswarm in the hive.

SIDNEY A. PECK.

Northumberland, Pa., Feb. 13.

Winter Brood-Rearing—Over Sixty Years Ago.

In the editorial on page 38, entitled "Brood Rearing In and Out of the Cellar," this statement is made: "The heat in the brood-nest is always the same temperature." Then at the

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bottom of the article it says that it is warmer in the center of the cluster out-of-doors, than in the cellar. My observation is that there is usually a greater loss of bees in out-door wintering than in the cellar. The incentive is to begin building up sooner, then a warm spell in spring gets the bees to doing something, while in the cellar they would remain quiet.

Sixty-four years ago, my father and an uncle cut down a hollow sycamore tree. Then each cut off a 10-foot log and hauled it home. The hollow was about 6 feet across. They put a floor in the bottom, a floor in the middle, and a roof on top. All being made tight, and painted, the "gums" (as they were called) were set up on end on 4 blocks large enough to hold the weight and not settle in the ground. They stood about 6 inches from the ground. On one side was a small door that a man could crawl in; on the opposite side were 2 one-inch holes bored about 1½ inches apart. A little step was fastened just below these holes for the bees to alight on.

Each of these two primitive bee-keepers made 2 box-hives, which were *something new then*. The first swarms were put into these hives and then put one in each apartment with little blocks under each corner, and set up close to the side where the entrances were in the gum. And now began the strife between these bee-keepers to see which could get the most and the nicest honey.

The first 2 years they let the bees build comb and put honey wherever they willed. These bees never swarmed, but were inclined to rear brood everywhere. The third year the bee-men made frames similar in principle to the modern clothes-horse, only they were nailed together solid. They cut strips of wood and laid them across from one rest to the other, something like a foot above each other, the whole looking like a new frame for a dwelling house. The old comb was cut out on one side of the original box and this new arrangement set up in its place. Had these bee-keepers understood or known anything about comb-spacing, it seems they would have made a grand success. As it was, the bees were more inclined to build crosswise than any other way, although they got some fine honey, and could get it any time they wished.

The fourth year father made a smaller frame, or rack, than the last described, and set it on top of the original hive with a 2-inch hole bored through the top. In this rack the bees seldom put any bee-bread, and never tried to rear any brood. Many times father would look in at these bees, and especially in the winter. John was mostly there and got to look in too. He (that is John) never tired looking at them. It was the grandest observatory arrangement I ever knew. I believe those bees reared brood the year around. At least there would be dead bees of all ages thrown out on the snow in the winter.

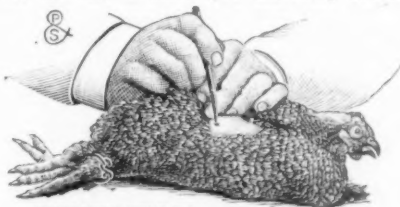
So much for my first experience in bee-keeping, 60-odd years ago. This experience was had near Tiffin, Seneca Co., Ohio.

My bees are in the cellar. It is snowing and very stormy to-day, so I am glad they are under shelter.

J. H. SHEDENHELM.
Ladora, Iowa, Feb. 18.

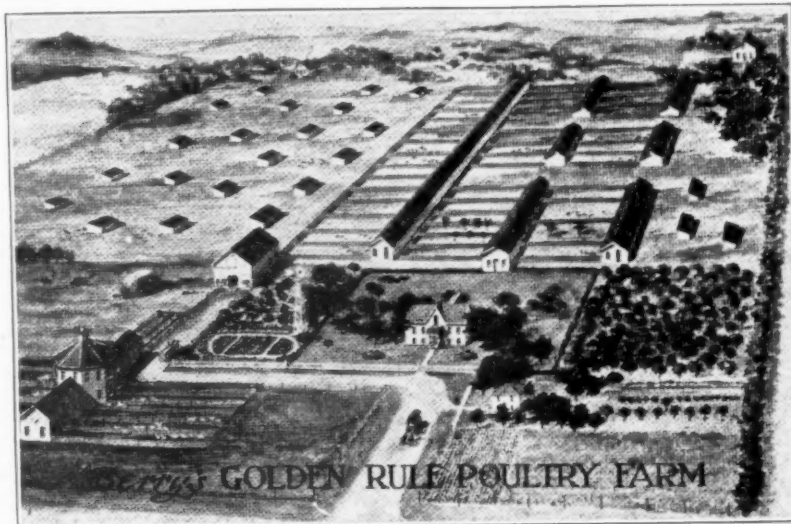
MONEY IN CAPONS.

Why sell a scraggy rooster, all breast-bone and comb, when less feed will produce a fat capon bringing more pounds per fowl and more money—per pound? There is no good reason why any one should do so. Capons are remarkably easy to raise, they are easy, very easy to sell at top price. (Did you ever hear of a glut in the capon market?), and, best of all, they are easy to make—you can easily become



a skilled operator, who does not lose more than one percent of the birds caponized; and if one does die, it dies under the capon knife, and you can have a chicken pot-pie for dinner, so there is no loss if you do kill one or two.

Look up this matter of caponizing, write the old firm of G. P. Pilling & Son, Arch St., Philadelphia, Pa., for their catalog of "Easy to Use" Caponizing Instruments (sent with full directions); get the set you like the best, and put money in your purse. There is money, big money in capons. Why don't you get your



A Great Poultry Establishment.—The illustration herewith is a bird's-eye view of Berry's Golden Rule Poultry Farm. It shows what wonderful strides have been made in the way of establishing mammoth poultry plants.

It shows what success may be attained in this business; it is one of the largest plants that has been brought to our notice, containing the finest and purest kinds of thoroughbred chickens, turkeys, ducks and geese. They are farm-raised birds, large, vigorous, and beautiful.

They manufacture an incubator and brooder—the "Biddy"—that hatches more chickens with less care and cost than any other they have tried.

Low prices are quoted in a very valuable book, "Profitable Poultry," that tells about their mammoth poultry farm and 45 breeds of fowls. This finely illustrated book of 84 pages tells of their success and how others may succeed with poultry. It will pay every one to send 4 cents for this book to Berry's Poultry Farm, Box 272, Clarinda, Iowa.

share? Please mention the American Bee Journal when writing.

Please mention the American Bee Journal when you write.

What is Vulcanite?

A great many farmers and builders are asking what "VULCANITE" is. Vulcanite is a mineral rubber compound, and has been used for over sixty years in the manufacture of ready roofing. It is the most durable material ever discovered for the purpose and makes a roofing that has never been equalled. It is particularly adapted to farm buildings of all kinds; is more lasting than shingles or tin; much cheaper in first cost and costs next to nothing to maintain, as it does not require annual painting.

VULCANITE is not affected by rain, snow, sun or frost—weather does not injure it in any way, and it makes a handsome appearance on the building.

For making old roofs new—especially old shingle roofs, VULCANITE is the most satisfactory thing you can use—simply lay it right over the old shingles and make the roof better than new—no expense or time removing old shingles.

For further particulars, write to the PATENT VULCANITE ROOFING CO., 626 S. Campbell Avenue, Chicago, Ill., for free samples and their roof book. Kindly mention this paper and the book will be sent free also.

SMALL FARM COLONY.

The most inviting small farm colony in South Jersey is being exploited by the Daniel Frazier Co., 750 Bailey Bldg., Philadelphia, Pa. It is especially attractive because it is very close to 2 large towns with schools, churches, stores, factories, and all the conveniences of city life close by. The opportunity is thus offered, if desired, for one or more members of the family to work in the city while the others are taking care of the suburban home. The Frazier Company have an extensive bureau of information about their South Jersey Colony, and they will gladly give full particulars about locations, prices, etc., to any one who requests them. Some of the 5-acre garden farms are sold for \$100 on installments of \$5.00 a month, to those who prefer to pay that way. It is only 17 miles from Atlantic City, and 37 miles from Philadelphia, being traversed by 3 railroad lines, which afford shipping facilities to New York, Philadelphia, and Atlantic City markets. If this matter appeals to you write to the Frazier Co., as above, and they will tell you all about it.

Souvenir Bee Postal Cards

We have gotten up 4 Souvenir Postal Cards of interest to bee-keepers. No. 1 is a Teddy Bear card, with a stanza of rhyme, a straw bee-hive, a jar and section of honey, etc. It is quite sentimental. No. 2 has the words and music of the song, "The Bee-keeper's Lullaby;" No. 3, the words and music of "Buckwheat Cakes and Honey;" and No. 4, the words and music of "The Humming of the Bees." We send these cards, postpaid, as follows: 4 cards for 10 cents, 10 cards for 20 cents; or 6 cards with the American Bee Journal one year for 50 cents. Send all orders to the office of the American Bee Journal, 118 W. Jackson Blvd., Chicago, Ill.

Eastern New York Convention

The second semi-annual meeting of the Eastern New York Bee-keepers' Association was held at Albany, March 12, 1908. There was a good attendance of bee-keepers. Eleven new members were added to the Association. A constitution was adopted and the following committee of 5 appointed to draft by-laws: Stephen Davenport, C. B. Loomis, J. Van Auken, the President and the Secretary. There was considerable discussion on the subjects of apiarian supplies, spring management, etc.

D. A. FRAZIER, Sec.

Albany, N. Y.

Apiarian Pictures

We would be glad to have those who can do so, send us pictures of bee-yards, or of anything else that would be of interest along the line of bee-keeping.

We will Buy and
Sell

HONEY

of the different grades and kinds.
If you have any to dispose of, or if
you intend to buy, correspond
with us.

We are always in the market
for

Beeswax

at highest market prices.

Hildreth & Segelken

265 & 267 Greenwich Street
NEW YORK, N. Y.

FENCE Strongest Made
Made of High Carbon Double Strength
Coiled Wire. Heavily Galvanized to
prevent rust. Have no agents. Sell at
factory prices on 30 days' free trial.
We pay all freight. 37 heights of farm
and poultry fence. Catalog Free.
COILED SPRING FENCE CO.
Box 89 Winchester, Indiana

Mention Bee Journal when writing.

Langstroth on the Honey-Bee

Revised by Dadant—Latest Edition

This is one of the standard books on
bee-culture, and ought to be in the
library of every bee-keeper. It is bound
substantially in cloth and contains nearly
600 pages, being revised by that large,
practical bee-keeper, so well-known to
all the readers of the American Bee
Journal—Mr. C. P. Dadant. Each sub-
ject is clearly and thoroughly explained,
so that by following the instructions of
this book one cannot fail to be wonder-
fully helped on the way to success with
bees.

The book we mail for \$1.20, or club
it with the American Bee Journal for
one year—both for \$1.45; or, we will
mail it as a premium, for sending us
FIVE NEW subscribers to the Bee Jour-
nal for one year, with \$2.50.

This is a splendid chance to get a
grand bee-book for a very little money
or work. Address,

GEORGE W. YORK & CO.,
118 W. Jackson Blvd., CHICAGO, ILL.

SAM JONES LIFE AND SAYINGS
SELLS FAST
1000 AGENTS WANTED.
100 PAGE CATALOGUE
AND CIRCULARS FREE.
\$100 PER MONTH TO
LIVE AGENTS. WRITE TODAY.
FRANKLIN-TURNER CO.
ATLANTA, GA.

MARSHFIELD BEE-GOODS

Your orders are what we are after now for
fall and winter. Drop us a card or letter telling
what you want, and we will make **Surprising**
Prices to you.

MARSHFIELD MFG. CO.,

Marshfield, Wis.

IOWA—J. W. Bittenbender, Knoxville,
Gregory & Son, Ottumwa.
KANSAS—S. C. Walker & Son, Smith
Center.
MICHIGAN—Lengst & Koenig, 127 South
13th St., Saginaw, E. S.
S. D. Buell, Union City.
NEBRASKA—Collier Bee-Supply Co.,
Fairbury.
CANADA—N. H. Smith, Tilbury, Ont.

ARIZONA—H. W. Ryder, Phoenix.
MINNESOTA—Northwestern Bee-Sup-
ply Co., Harmony.
ILLINOIS—D. L. Durham, Kankakee.
OHIO—F. M. Hollowell Harrison.
TEXAS—White Mfg. Co., Blossom.
WISCONSIN—S. W. Hines Mercantile
Co., Cumberland.
J. Gobel, Glenwood.

Comb Honey Supers

GOOD AS NEW

I have the following supers in splendid
condition, all well painted and with section-
holders in them.

150 8-frame Plain 90 10-frame Plain
10 " Bee-way 10 " Bee-way
58-frame Ideal, 13-8x5.

I will sell them at a bargain. Write for
prices and further particulars, address

Chas. Clarke

9720 Logan Ave.,
WASHINGTON HEIGHTS, ILL.

1884

1908

Root's Goods always in stock

FOR YOU

Twenty-four successful years man-
ufacturing bee-supplies and rear-
ing Italian Bees and Queens.
Root's Goods in Stock. Write for
Catalog and Prices.

J. M. Jenkins, Wetumpka, Alabama

HAND-MADE SMOKERS

Extracts from Catalogs—1907:

Chas. Dadant & Son, Hamilton, Ill.—This is the Smoker we
recommend above all others.

G. B. Lewis Co., Watertown, Wis.—We have sold these Smok-
ers for a good many years and never received a single complaint.

A. I. Root Co., Medina, Ohio.—The cone fits inside of the cup
so that the liquid creosote runs down inside of the smoker.

All Bingham Smokers are stamped on the tin, "Patented 1878,
1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made.....\$1.50—4 inch stove

Doctor—cheapest made to use.....1.10—3 1/4 "

Conqueror—right for most apiaries.....1.00—3 "

Large—lasts longer than any other......90—2 1/4 "

Little Wonder—as its name implies......65—2 "

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Farwell, Mich



Patented May 20, 1879. **BEST ON EARTH.**

BEE-SUPPLIES

40-Page Cata-
log Free.
Brimful of the
latest make of
hives, etc. Our Supplies will please you in every
way. Prices are right. We allow the usual early-
order discounts. Italian Bees and Queens in
season.

JOHN NEBEL & SON SUPPLY CO.,
High Hill, Montg. Co., Mo.
Mention Bee Journal when writing.

Bee-Keepers' Supplies Sold

At the very lowest profit possible

Dovetail Hives, Sections, Etc.—A complete
stock bought in car lots. Subscriptions given free
with orders. Send for my 32-page catalog free.

W. D. SOPER, Jackson, Mich.
Mention Bee Journal when writing.

INSURE

YOUR ROOF



Against Water, Weather and Wear

Use "Vulcanite" Ready Roofing and insure your roof against damage by water, weather and wear. It assures long life to buildings and absolute protection to their contents. For over 60 years its superior qualities have been recognized wherever roofing is used. It is today the recognized standard Ready Roofing of two continents, is cheaper than shingles or tin—lasts longer, requires no annual painting; easily put on—not affected by rain or snow, wet or dry, heat or cold; is fire-resisting, acid-proof and smoke-proof. Put on over old shingles it makes the old roof better than new. Before you build or repair write for free booklet, "The Right Roofing and the Reasons Why." Write today.

Patent Vulcanite Roofing Co., Dept. 48
626-59 S. Campbell Ave., Chicago, Ill.,
or Franklin, Warren Co., Ohio.

Stanley Queen Incubator and Brooder

An arrangement that allows the bees access to the cells and Queens at all times. Patented July 7, 1903. Price, each, \$5.00.

Stanley Twin Nucleus Box

An arrangement that has control of the Queen by a 3-hole wheel, with one entrance screened, one hole with queen-excluding zinc, and one hole to regulate entrance. (Patent applied for.) Price, each, \$1.00. Cylinder Cages, postpaid, each, 10c. Queen-Cells, 100 mounted, with sample of Cylinder Cage (sent postpaid,) for 75 cents.

Bees and Queens

Nuclei—One 3 L. frame, \$2.50; price of Queen to be added.

Queens—Tested Italian, each, \$1.25, or \$10 a dozen. Breeding Queens, \$2 to each. I have a few Imported Italian Queens at the same price.

Untested Queens after May 15th—Italian (warranted) 75 cents each; dozen, \$7.00. Carniolan, Caucasian and other strains, untested, 75c each, or \$7.00 a dozen.

ARTHUR STANLEY, Dixon, Lee Co., Ill.

Italian Bees Direct From Italy

The Best in the World.

Extensive Apiaries.

Address: ENRICO PENNA, Bologna, Italy.

1908 PRICE-LIST FOR AMERICA:

	May	June	July	Aug.	Sept.	Oct.
One unselected fertilized Italian queen, (warranted pure)	\$1.20	\$0.90	\$0.90	\$0.90	\$0.90	\$0.90
One selected fertilized Italian queen, (warranted pure)	1.40	1.30	1.30	1.30	1.30	1.30
One extra-selected Italian breeding-queen	2.50	2.50	2.50	2.50	2.50	2.50

Advertisement.—In Italy we have but one race of bees. So all my queens are warranted very pure. I have been keeping bees these last 10 years, and have never had a single case of foul brood (which is scarcely to be found in this country). It is scarcely necessary for me to say that I take every possible care to avoid it. So my customers must never have any fear of contagion from my bees. All my queens are reared from extra-selected breeding queens most carefully tested.

Conditions.—Cash with orders. The queens that die on the journey will be replaced provided they are sent back immediately in their boxes. Purchasers are eagerly requested to write their addresses very clear.

FRUIT TREES \$5

Freight Paid, Per 100

Free from disease; all fumigated before shipping—Apple, Peach, Plum, Pear, Cherry, Carolina Poplar. Order here, Catalog Free.

RELANCE NURSERY CO.,
Box G, Geneva, N. Y.

BEST SECTIONS — per 1000, \$4; 3000, \$3.70; 5000, \$3.50 per 1000. No. 2, 50c less. Plain, 25c less. Discount on Danz and Root's hives and other supplies. Standard goods. Catalog free. H. S. DUBY, St. Anne, Ill. 3A22

Mention Bee Journal when writing.

ITALIAN BEES AND QUEENS, SUPPLIES
Standard Goods. Ask for Circulars.

ALISO APIARY, El Toro, Orange Co., Calif.
Mention Bee Journal when writing.

The **Maule** Seed Book FOR 1908

contains 63 Specialties in Vegetables, 60 in Flowers, besides everything else good, old or new, worth growing.

You need it.
It is free to all sending me their address on a postal.

Wm. Henry Maule 1732 Filbert Street Philadelphia, Pa.

Mention Bee Journal when writing.



Cows' Relief is a specific Remedy for all troubles of bag and teats. It enables dairymen, farmers and other cow owners to keep their cows in a healthy and profitable condition. Cows' Relief is one of the most perfectly penetrating and disinfecting compounds in existence. It goes directly to the seat of the trouble, relieves the congestion and breaks up the bunches that prevent a natural flow of milk.

Twelve to twenty-four hours' time is all that is required to relieve any case of Caked Bag, if applied freely at the beginning of the trouble. It is excellent

FOR SORE TEATS

For heifers with first calf Cows' Relief works in a most pleasing, prompt and successful manner. It relieves the soreness and swelling in the bag and is worth its weight in gold to every dairymen. It keeps the teats soft and flexible, and renders the animal quiet and docile.

H. C. Rice, Farmington, Conn., says: "Please send me two boxes of Cows' Relief. Enclosed find check for same. Please send at once. I wouldn't be without it in my stable."

L. F. Cuthbert, Hammond, N. Y., says: "I have used your Cows' Relief and find it a very valuable remedy for Caked Bag."

We have scores of testimonials like the above. Ask your dealer for Cows' Relief and insist on having the genuine. If he cannot supply you write direct to us, enclosing \$1 for large package prepaid, (enough for four or five ordinary cases). Your money back if you are not satisfied. Positive guarantee on every package. Or send your name and one neighbor's who keeps cows, stating how many you each have, and we will send our book concerning "Cow Troubles," also Goldine Cow Watch Charm FREE while they last.

OUR HUSBANDS MFG. CO.,
716 Chapel St., Lyndon, Vt.

Mention Bee Journal when writing.

American Bee Journal

Now Ready

The 97th edition of our catalog is now ready. If you have not received a copy and are ready to place an order for any supplies write for a copy. Our mailing list has over 400,000 names, so time is required to get the entire edition mailed. We explain this so any one may understand why a catalog may not reach him early.

The A B C of Bee Culture

When we announced the completion of the new edition late in 1907 there was a good deal of satisfaction to notice the big bunch of orders on hand, although we did regret the unavoidable delay in getting the books to some customers who had waited patiently for months. Over two thousand copies of this edition have already been sent out. We believe all urgent orders have been filled. We felt that the change of price to \$1.50 postpaid might cause a little slackening in the demand. Not so, however, for in all our experience the orders never came faster.

We have also of the English edition a half leather at \$2.00 and full leather at \$2.50, postpaid.

GERMAN EDITION, A B C der Bienenzucht in paper covers, \$2.00. Cloth-bound at \$2.50, postpaid, to any country.

FRENCH EDITION, A B C de L'Apiculture, cloth-bound, at \$2.00, postpaid, to any country.

Gleanings in Bee Culture

If you haven't seen a late copy of Gleanings you can't tell from any brief description how really magnificent it is. There are many valuable departments, and our subscribers just at this season of the year are telling how much they appreciate the paper.

Each issue is very fully illustrated. The covers are done by the finest engravers in Chicago, and our writers are the best in the land. Besides dozens of writers of prominence whose names we can't even mention for lack of space, we have such men as Dr. E. F. Phillips, U. S. Dept. of Agriculture; Dr. Edward F. Bigelow, Associate Editor St. Nicholas; F. Dundas Todd, former Editor Photo-Beacon; Allen Latham, Connecticut, etc.

A trial of six months (12 numbers) costs 25c. If in addition to your own subscription you secure others for six months keep 10c on each one for your trouble. A liberal cash commission to those who do canvassing for us.

Gasoline Engines and Power

Honey Extractors

For large apiaries, or where the honey comes with a rush and labor is scarce, you should investigate our power machines. A circular of these will be sent on request.

THE A. I. ROOT COMPANY, MEDINA, OHIO

BETTER THAN SHINGLES -AND CHEAPER

Shingles are getting so scarce and of such poor quality that builders everywhere are using "Vulcanite" Roofing in their place. It makes a splendid roof, wears longer than shingles or tin, looks better, is easier and quicker laid; much cheaper and does not warp or rot. For a thoroughly reliable, durable, economical roof "Vulcanite" solves the roofing problem. It is the standard Ready Prepared Roofing in this and foreign countries—for over 60 years it has been used on all kinds of buildings so successfully that its sale is increasing at a wonderful rate. Once laid the roof expense stops—it does not require annual painting. Before you build or repair get our free booklet, "The Right Roofing and the Reasons Why," tells why you should buy "Vulcanite"—the kind that's right. Write for it today.

PATENT VULCANITE ROOFING CO.,

Dept. 48, 626-59 So. Campbell Ave., Chicago, Ill.

or Franklin, Warren Co., Ohio.



Lasts Longer
—
Looks Better
—
Easier, Quicker Put On



A FREE ROSE GARDEN FOR EVERY HOME

Our Star
Collection Free

Helen Gould—rosy-crimson. Maman Cochet, Queen of pink teas. Etoile de Lyon, deep golden yellow. All constant bloomers and delightfully fragrant. Send 25 cents to cover packing and postage; we will mail you three choice climbing roses, Red, Yellow and Pink, and will include our Star Collection FREE. Catalog with every order. Other Rose Bargains. \$50 in prizes. Binghamton Seed Co., 300 Court St., Binghamton, N. Y.

The American Institute of Phrenology

Incorporated 1866, by special act of the New York Legislature, will open its next session the first Wednesday in September. The subjects embraced: Phrenology, Physiognomy, Ethnology, Psychology, Physiology, Anatomy, Hygiene and Anthropology. For terms and particulars apply to M. H. Piercy, Sec., care Fowler & Wells Co., 24 East 22d St., New York, N. Y.

Headquarters for Shook Swarms, until May 15 (buyer furnishes cases) at \$1.50 f. o. b.—2 frames brood, enough to cover 4 frames, with queen. A. B. DUNCAN, Argyle, Ga.

United POULTRY SUPPLIES

Poultry-raisers have found that the better the incubators and brooders they use, the better the foods they feed, the more money they make, and the more pleasure they get out of their fowls. We want to supply you with the better incubators and brooders, foods and supplies. We manufacture and market the best goods in the world in our line. The "United" Incubators and brooders—standard the world over, and favorites with poultry people—are our leaders in the machine line. "Banner" and "Fidelity" Foods need no argument to convince you of their merits. We manufacture and guarantee them. By buying all your supplies at one place you will save on freight, and will always get a quality you can depend on. Send us your orders and save money. Before you buy elsewhere write for our free catalogs. Do it today.

United Incubator & Poultry Supply Mfg. Co., Dept. 27
26-28 Vesey St., N. Y. City.

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Fall Supplies

—FOR—

Bee-Keepers

Everything you want. All made by us in our own factories. At **Lowest Prices.**

THE AMERICAN BEE-KEEPER, a monthly at 50c a year. Published 17 years.

Sample copy and illustrated catalog and price-list **FREE.** Address,

THE W. T. FALCONER MFG. CO.,

Dept. B. JAMESTOWN, N. Y.

HONEY

We have some fine, thick white extracted honey, 2 cans to a case, 124 lbs. at 9 cts. a lb., 5 cases 53 cts. lb., 10 cases 8 1/2 cts. lb. Sample 10 cts.

HONEY-JARS

No. 25 jar \$5.50 gross, 5 gross \$5.25 gross. 1 lb square jars \$5.00 gross. Catalog of supplies free

I. J. STRINGHAM,
105 Park Pl., N. Y. City

APIARIES, Glen Cove, L. I.

Mention Bee Journal when writing.

Honey and Beeswax

CHICAGO, Mar. 30.—There is very little activity in the honey market. It has been a dragging one all winter, and the offerings are in excess of the demand of both comb and extracted. Prices are lower rather than higher, especially is this true of the Colorado and Utah products. Comb honey, No. 1 to fancy, 15 to 16c; off grades from 1 to 5c less. Extracted, white, ranges from 7 to 9c, according to the kind and quantity taken. Amber grades, 6 to 7c. Beeswax, 28 to 30c. **R. A. BURNETT & CO.**

CINCINNATI, Mar. 30.—The market on comb honey is very quiet. There is no demand. Extracted honey is in good demand. Water-white sage honey is selling at 9 to 10c. Amber in barrels at 6 to 6 1/2c. Beeswax in fair demand at 32c. **C. H. W. WEBER.**

SAN FRANCISCO, April 1.—In reference to quotations on honey, we would say that spot stocks are so light it is not much use quoting. There are 1 or 2 cars in Southern California which are held by the apiarists at 6 1/2c, which is the only honey we know of left in the State. It will therefore be seen that it would be useless to give present market quotations since there is really no honey quotable. **GUGGENHIME & CO.**

Headquarters for Bee-Supplies

ROOT'S GOODS

LARGE DISCOUNTS OFFERED ON EARLY ORDERS. Have a large stock on hand, and can supply promptly. Freight Rates from CINCINNATI are the **LOWEST, ESPECIALLY FOR THE SOUTH**

As almost all freight now goes through Cincinnati. You will save money buying from me. Catalog mailed free. Send for same.

WILL BUY OR SELL YOU

HONEY

IF YOU HAVE ANY TO SELL

mail sample and state lowest price expected delivered Cincinnati. If you want to buy, state quality and quantity and I will cheerfully quote you price.

Beeswax Wanted

Will pay, at all times, highest market price on receipt of goods.

C. H. W. WEBER CINCINNATI ... OHIO ...

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

At Root's Factory Prices

DENVER, Mar. 3.—Market on comb honey is slow, and prices declining. We quote to our trade No. 1 white, per case of 24 sections, \$3.00; No. 1 light amber, \$2.85; No. 2, \$2.70. Extracted, white, 8 to 9c; light amber, 6 1/4 to 7 1/2c. Clean yellow beeswax 25c delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.

LOS ANGELES, April 1.—The prospects for a honey crop in Southern California this season are very poor. Unless we have considerable rain within the next 2 months there will be no honey at all. The present prices on extracted honey are 6 to 7 1/2c. Comb honey 12 1/2 to 18c. There is very little honey left on the market here.

H. J. MERCER.

TOLEDO, Mar. 30.—There is very little change in the market on honey. Fancy white honey brings from 16 to 16 1/2c in a retail market; no demand for lower grades. Extracted, white honey in cans, 8 1/4 to 9c; amber, 5 1/2 to 6 1/2c, according to quality. Beeswax, 26 to 28c.

GRIGGS BROS. & NICHOLS CO.

KANSAS CITY, Mo., Mar. 30.—The demand for both comb and extracted honey is fair; the receipts not large. It is getting a little late for 1907 comb on account of its being liable to granulate. We quote: No. 1 white comb, 24 section per case, \$3.00; No. 2 white and amber, \$2.75. Extracted, white, 7 1/2c. Beeswax, 25c. **C. C. CLEMONS & CO.**

INDIANAPOLIS, Mar. 28.—Demand for best grades of extracted honey is good, while sales on comb honey are very slow. Jobbers are well supplied, but almost none is being offered by producers. Jobbers have been paying the following prices, delivered here: No. 1 and fancy comb, 16 to 17c; extracted, white clover, 8 to 9c; amber in barrels, slow at 6 to 6 1/2c. Beeswax, 28c cash, or 30 cents in exchange for merchandise. With the promise of a fair crop, jobbers are predicting slightly lower prices.

WALTER S. POWDER.

PHILADELPHIA, Mar. 30.—The sale of both comb and extracted honey has been very light since the holidays until last week, when the stock in the stores was cleaned out somewhat, and there has been quite a demand for honey. Prices, however, seem weak, and large lots are being forced through the commission men from beekeepers who have been holding their honey back for better prices. We quote: Fancy comb honey, 15 to 16c; No. 1, 14 to 15c; amber, 12c. Extracted honey, fancy white in 60-lb. cans, 8 1/4 to 9 1/2c; light amber, 7 to 8c. Beeswax, 28c. We do not handle honey on commission. **W. A. SELSER.**

NEW YORK, Mar. 30.—Demand for comb honey is next to nothing. Some little inquiry for choice white stock, while off grades are entirely neglected, and while there are no large stocks on hand, and with no demand at all, indications are that some of these goods will have to be carried over the summer. Prices are certainly nominal, and we cannot encourage shipments of comb honey at this time of any grade. Extracted honey, demand fair only, but plenty to supply. While the domestic crop is fairly well cleaned up large quantities are now arriving from the West Indies, and selling at rather low figures. We quote: California white sage, 8 1/4 to 9c; light amber, 8c; amber 7 to 7 1/2c; West Indies, 58 to 62c per gallon, duty paid according to quality. From information we are receiving we are of the opinion that there will be a pretty good crop in the South this year, and we expect shipments to come along within a month from now. Beeswax is firmer, and holding steady at 30 to 31c. **HILDRETH & SEGELKEN.**

HONEY AND BEESWAX

When consigning, buying, or selling, consult

R. A. BURNETT & CO.

199 South Water St.

Chicago, Ill

Our New Headquarters

We have moved our business from Redford to Lansing, and are now equipped to supply you with "Root Quality" Goods to the very best advantage to you. We have a **Complete Stock**, and ours is the **best shipping point in the State**. Address your letters, and ship **Beeswax** to us here.

M. H. HUNT & SON,

Lansing, Michigan

BEE-SUPPLIES Sold at half-price. Send us list of your wants. Estimates cheerfully given. **J. F. BUCHMAYER, Dept. B. J., Iowa City, Ia.**

MR. BEE-KEEPER

Was 1907 a POOR YEAR for you?
It was a GOOD YEAR for users of

Dadant's Foundation

One dealer used	-	-	14,000	pounds	Another dealer used	-	-	4,500	pounds
Another dealer used	-	-	7,250	"	Another dealer used	-	-	4,500	"
Another dealer used	-	-	6,000	"	Another dealer used	-	-	4,500	"
Another dealer used				-	-	-	-	3,000	pounds

Thousands of pounds sold to the bee-keeper direct or worked up for him out of his beeswax.

The *dealer* likes *Dadant's Foundation* because the bee-keeper likes it.

The bee-keeper likes it because his *bees* like it.

The *bees* like it because it is exactly like their own comb—so *pure* and *sweet* and *clean*.

Dadant's Foundation is the Standard because it is the *best*.

Wax worked into Foundation. Send for our Supply Catalog.

DADANT & SONS,

Hamilton, Illinois



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THE AWL FOR ALL

Mention Bee Journal when writing.



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